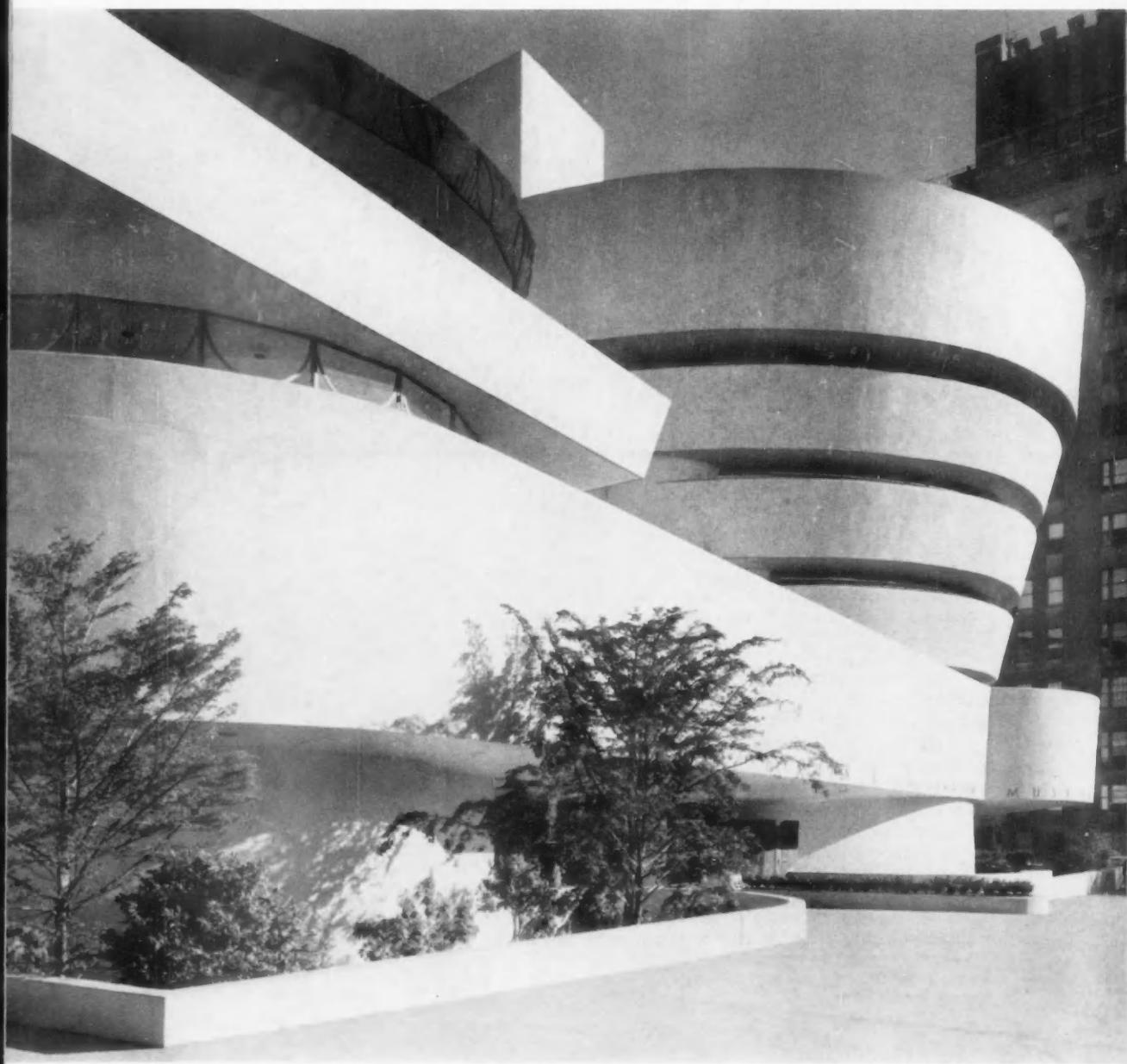


CONCRETE

SEPTEMBER, 1960



1959 Ready Mix Production . . . Construction

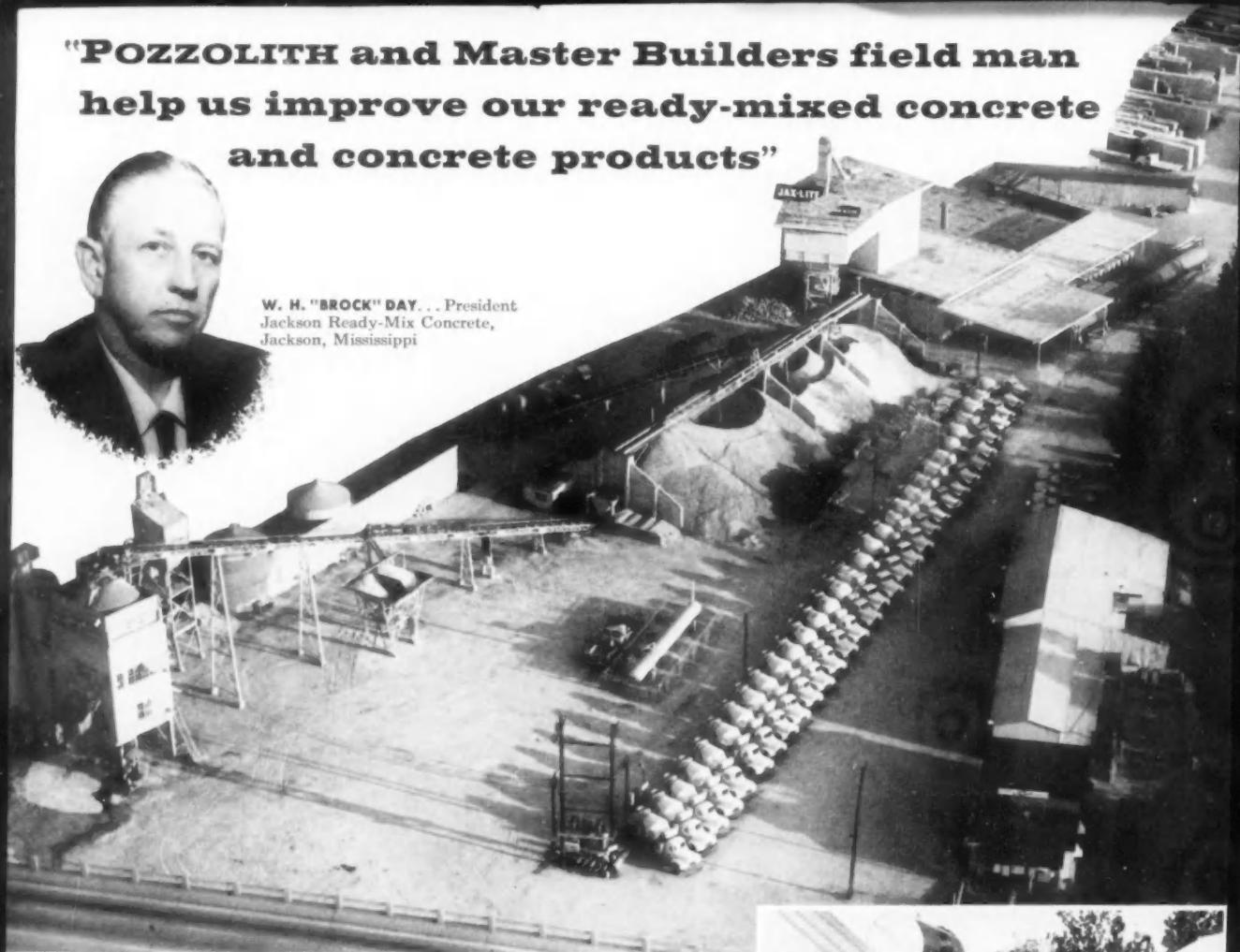
Outlook in Last Half . . . Radio Maintenance at Maule

LEPT
SERIALS-4
NO. 101-13
1960 SEPTEMBER
CONCRETE

"POZZOLITH and Master Builders field man help us improve our ready-mixed concrete and concrete products"



W. H. "BROCK" DAY... President
Jackson Ready-Mix Concrete,
Jackson, Mississippi



AERIAL VIEW of Jackson Ready-Mix Concrete, Jackson, Mississippi.

"Here in Jackson, our company produces ready-mixed concrete, pre-stressed concrete units and concrete masonry units. It's no accident that POZZOLITH is an ingredient of these products. Naturally, materials and mix proportions vary from product to product, but everything we produce must—and does—meet exacting performance requirements and strict specifications.

"Our customers deserve much of the credit for our company's growth—because over the years they've shown their appreciation for high quality by coming back to us for more. POZZOLITH has earned some credit, too—because it helps us improve and maintain our high standards. Better workability, less plastic shrinkage and drying shrinkage plus uniform strength and air content in our 'hard rock' and lightweight mixes—higher strength and more uniform texture of our Jax-Lite concrete masonry units.

"We lean on the local Master Builders field man . . . his service is invaluable to us and to our customers."

Over 1,500 **quality conscious** producers of Ready-Mixed concrete and concrete products are using today's POZZOLITH for similar reasons. They've found there's no equal to POZZOLITH . . . and to Master Builders field service. You and your customers can profit immediately. Call in the local field man now.

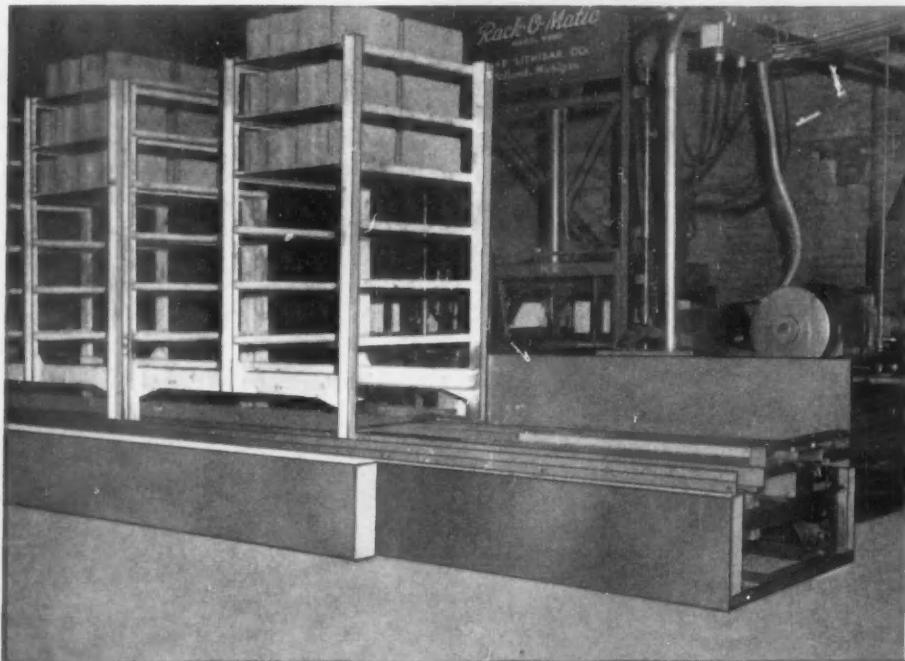
The Master Builders Company
Division of American-Marietta Co.
Cleveland, Ohio
World-wide manufacturing and service facilities



JACKSON READY-MIX CONCRETE technical team includes (from left to right) T. J. Farish, the local Master Builders field man; Lee Sweeney, Jr., Vice President—Masonry Division; George Nichols, Vice President—Ready-Mix Division; Mott Pevey, Vice President—Prestress Division; James Dunn, Sales Engineer—Lightweight Aggregate Division; Carl Sills, Quality Control Engineer. This technical team is responsible for maintaining the high quality standards of their concrete and concrete products.

MASTER BUILDERS. POZZOLITH®

*POZZOLITH is a registered trademark of The Master Builders Co. for its concrete admixture that helps produce better quality ready-mix concrete more economically.



LITHIBAR *Rack-O-Matic*

THE MODERN AUTOMATIC LOADER-UNLOADER FOR ALL PLAIN PALLET MACHINES

It all happens like clockwork! Green block coming off the block machine are placed in the rack, while cured blocks are simultaneously removed from rack to conveyor, with the empty pallets returned to feeder. As soon as the loading-unloading cycle is completed, automatic indexing moves the racks for the next cycle, all without interruption of block production. Eliminates off-bearer operator; reduces handling; cuts block loss;

speeds production, — and puts you 'way out in front of competition. Investigate the Rack-O-Matic! It's the all-in-one systematic operation for lower cost modern day block production. Get the coupon off today!

Use This Coupon for Quick Action

LITHIBAR COMPANY, HOLLAND, MICHIGAN Dept. C-9

Send along your data on the Imperial-400 Series. Have your representative call on us.

Name. _____

Firm. _____

Address. _____

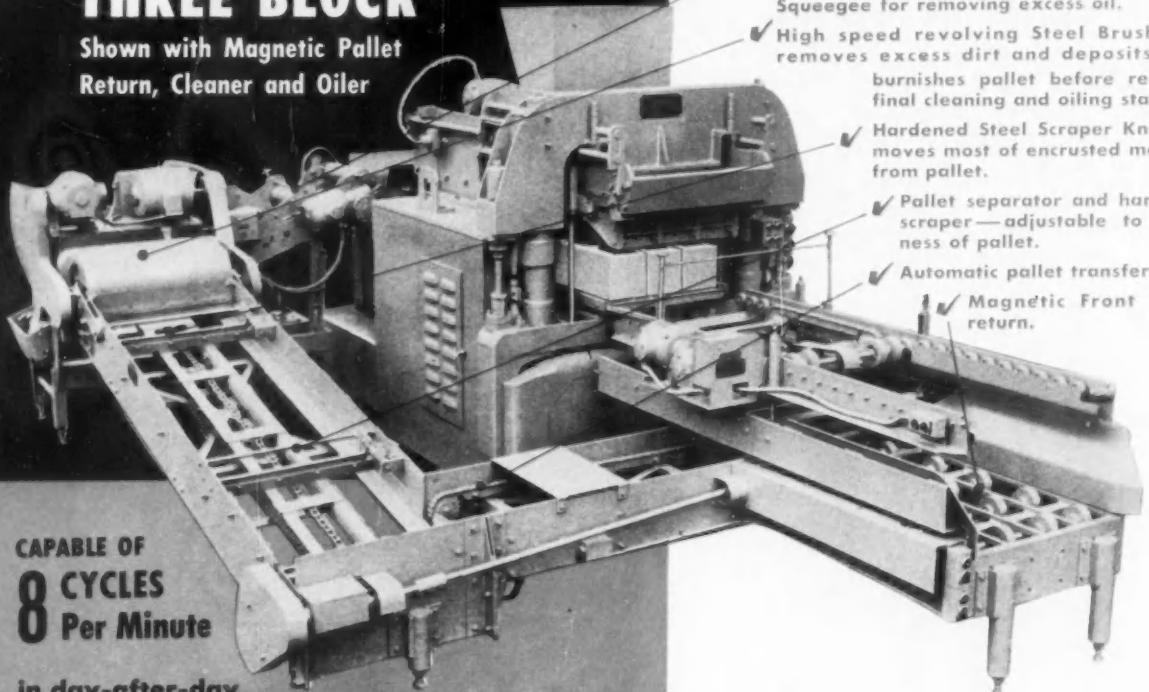
City. _____ State. _____

MANUFACTURERS OF BLOCK MACHINES, MIXERS, SKIP HOISTS,
CUBERS, SPLITTERS, LOADER-UNLOADERS AND RELATED EQUIP-
MENT FOR THE CONCRETE BLOCK INDUSTRY.



Columbia SUPER 12 THREE BLOCK

Shown with Magnetic Pallet
Return, Cleaner and Oiler



CAPABLE OF
8 CYCLES
Per Minute

in day-after-day
operation, with a minimum of maintenance.
... "years ahead" engineering makes the
SUPER 12 ideal for plants where automation
is now in use or planned for in the future.

THESE FEATURES MEAN GREATER PRODUCTION, GREATER PROFITS: Bolted construction, for easier and faster maintenance • can be changed over to produce half heights in 30 minutes or less • 15 to 20-minute mold changes • new "high frequency" vibration • compression and feed drawer cylinders oil cushioned to prevent shock • built-in hydraulic unit • interchangeable liners on feed box • fully automatic density control • new synchronized electronic system and ...

THE SUPER 12 CAN BE ADAPTED TO USE MOLDS FROM MANY OTHER MAKES OF BLOCK MACHINES. AVAILABLE IN BOTH 8" AND 12" HIGH MODELS THE SUPER 12 MAY BE PURCHASED ON EASY PAY-AS-YOU-DEPRECIATE TERMS.

Write, wire or phone—ask to have a Columbia representative analyze your plant performance and production potential. There will be no obligation.



Columbia MACHINE

Home Office: 107 Grand Blvd., Vancouver, Washington
Branches: Mattoon, Illinois; Burbank, California

Manufacturers and world-wide distributors of a complete line
of plant equipment for production of concrete products

SAVE TIME, LABOR AND MONEY WITH CLEAN, UNIFORMLY OILED PALLETS

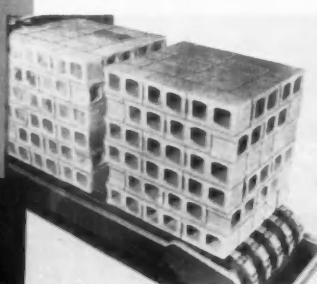
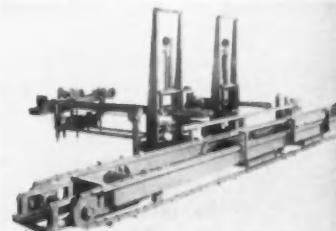
- ✓ Cleaner and Oiler—Includes Hardened Adjustable Scraper, Automatic Oiler and Squeegee for removing excess oil.
- ✓ High speed revolving Steel Brush that removes excess dirt and deposits, also burnishes pallet before reaching final cleaning and oiling stage.
- ✓ Hardened Steel Scraper Knife removes most of encrusted material from pallet.
- ✓ Pallet separator and hardened scraper—adjustable to thickness of pallet.
- ✓ Automatic pallet transfer.
- ✓ Magnetic Front Pallet return.

WITH COLUMBIA EQUIPMENT YOU "GROW WITH THE INDUSTRY"

There are no "orphans" in the Columbia line. Every unit built is engineered to work with existing Columbia machines ... to modernize you simply "add-on" new features such as the

AUTOMATIC RACK LOADER AND UNLOADER

Columbia's answer to lower costs and greater profits through automation. The Columbia Loader and Unloader reduces man hours as much as 40%, gives you higher quality, more salable blocks, cuts employee fatigue and assures the plant owner of complete production control. Designed to fit all Columbia machines and easily adaptable to most others, the Loader and Unloader will pay for itself in higher production of quality blocks and lower production costs.



COLUMBIA'S NEW AUTOMATIC CUBER

New and entirely different. Columbia's fully automatic Cuber forms tight, compact, completely interlocked cubes that are automatically patterned to eliminate hand binding or other manual operations. Each cube, as it leaves the machine, is easily accessible to the fork truck and ready for yard storage. Cubes are formed so that fork truck operator may pick up either a full cube or half.

The new Cuber is built to work with any type of offbearing, but when added to Columbia's Automatic Rack Loader and Unloader, it becomes the final step in "all inside" automatic block production. Blocks of 4" to 12" widths can be handled by the machine and may be assembled directly on the rollaway or on automatically fed pallets.

Published Monthly by

Vol. 68, No. 9

SEPTEMBER, 1960

**Concrete Publishing
Corp.**

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Chicago 6, Ill.
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CONCRETE

For producers of concrete block, precast and prestressed concrete products and ready mixed concrete

DONALD T. PAPINEAU

Publisher

JACK ANDERSON

Editor

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13 NRMCA industry survey adds
lightweight production, cost
figures to '59 survey of output

18 ECSA Meeting Report

19 Outlook for construction in
last half of 1960

5 News

20 Equipment & Materials

The Cover:

The unusual, and controversial, Solomon Guggenheim Museum in New York City is spirally shaped, built of architectural concrete.

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Besser's interest in YOUR SUCCESS! doesn't end with the sale!

*Besser provides all these EXTRA SERVICES to save you time and money
... help make your blockmaking operations easier and more profitable*

Around-the-Clock Service

Besser maintains a staff of expert field service engineers operating on a 24-hours-a-day basis from 20 conveniently located district offices. These men are not salesmen "doubling in brass," but highly trained engineers. They check your Besser equipment frequently, to keep it in tip-top operating condition. A network of strategically located Besser warehouses assures fast deliveries of genuine BESCO parts.



Plant Layout Service

Provides authoritative block plant-engineering counsel on a no-charge basis. You benefit by the latest thinking on placing machines, men, and materials for the most efficient work-flow, greatest daily output, production economies.



Besser School for Blockmakers

Eleven-day technical sessions for ALL block plant owners, managers, superintendents, foremen, and maintenance men. We also conduct special management seminars covering such subjects as cost savings, statement analysis, profit planning, and others.



Besser Technical Center

Conducts laboratory investigations of problems concerning processing, mixing, mold vibration, and end-product performance. Offers field and laboratory consultation on the selection, grading, proportioning, and mixing of aggregates. Conducts curing checks and routine testing. Nominal charge includes services of personnel, materials, and use of latest equipment.



Cooperative Advertising

Besser offers a comprehensive program of both no-cost and below-cost brochures, technical bulletins, calendars, post cards, ad mats, and other promotional aids imprinted with your name and address. Free block-plant brochure layout service available.



Service to Architects

Specialized planning for architects, builders, and other factors instrumental in getting more concrete block used in today's industrial, commercial, and residential construction. This service supplements the Besser Company's program of national advertising promoting concrete block and appearing in the professional magazines read by your architect and builder customers.



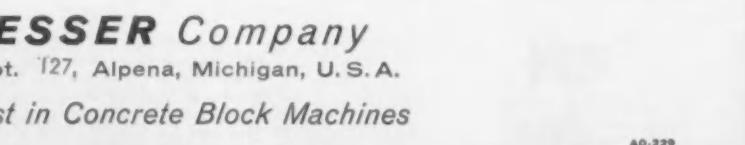
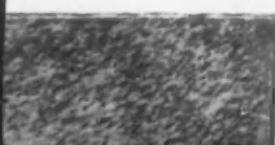
YOU CAN BANK ON BESSER for the best in blockmaking, handling—and servicing



BESSER Company

Dept. 127, Alpena, Michigan, U.S.A.

First in Concrete Block Machines



News

Lin Tee Franchisees to Meet Sept. 26

A conference will be held at the Statler Hilton, New York City, on September 26 for Lin Tee franchisees, of T. Y. Lin & Assoc., Van Nuys, Calif.

The group will discuss production, promotion and advances of Lin Tee products.

The staff of T. Y. Lin, according to another announcement, is now using a computer with great success to aid in design of single and double tees, I sections, box sections, continuous spans and flat plate designs.

Lin finds that the computer is particularly suited to design calculations in prestress.

May PC Shipments Down 9 Percent

Shipments of finished portland cement in May decreased 9%, from last year's 32.9 million barrels to 30.1 million this year, according to the Bureau of Mines.

Apparent consumption, to judge by shipments, was higher in 18 states and lower in 32 states and the District of Columbia. A decrease of more than 10% was shown in Ill., Fla., Mich., Pa., and at least 15 other states. Calif., Tex. and New York showed decreases of from 5 to 10%.

Webb City RM Plant Opens

Independent Gravel Co. has opened a new ready mix plant in Webb City, Mo., with capacity of 40 cu. yds. an hour. Otto H. Toutz is the manager, with the new plant employing 15 men.

The company will be known as Independent Redi-Mix Concrete Co., a subsidiary of the parent firm.

Stratmann To Build New RM Plant

Stratmann Lumber Co., of Pocahontas, Ill., plans to erect a ready mix plant behind its present building, according to Don Stratmann. The plant, employing 12, was scheduled to open by late summer or early fall. Three trucks will be used and the plant will also produce septic tanks, culverts and well tiles.

Charles Schott Buys Concrete Products Mfg. Co.

Charles J. Schott, an industrialist from Cincinnati, has purchased Concrete Products Mfg. Co., St. Louis, at a cost reportedly more than \$2 million. He purchased the firm from R. J. McManemin.

Schott and his family own and operate more than 30 companies, including an Alton, Ill., brick company. He also recently purchased another Illinois brick company.

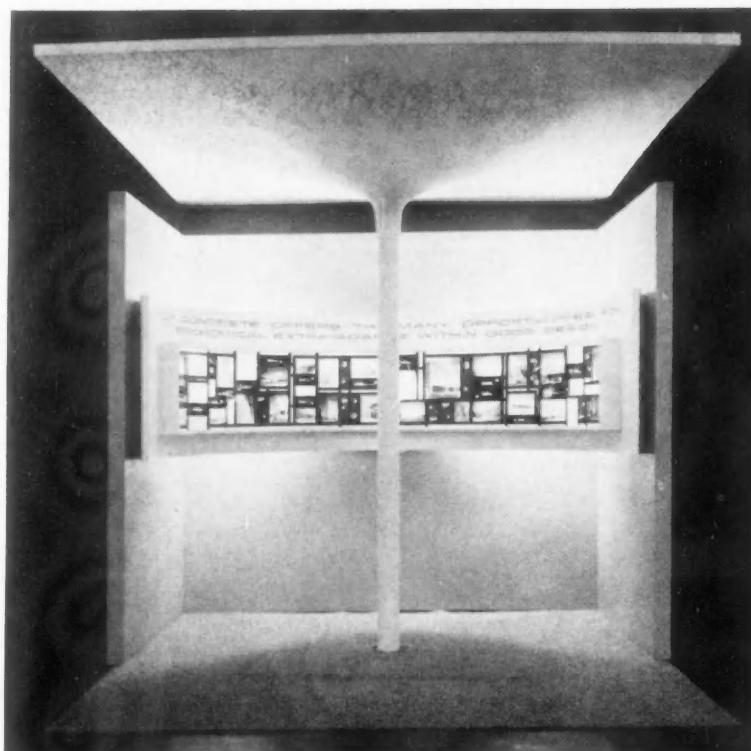
Henry Graves Dies

Henry G. Graves, 55, president of Henry G. Graves & Sons Transit Mixed Concrete Co., Georgetown, Del., died in late June following a heart attack.

New Miss RM Plant

A new ready mix plant, Ocean Springs (Miss.) Ready Mix Concrete Co., has been opened by Wade H. White.

White formerly was with Magnolia (Miss.) Concrete Products Co.



PCA Display Wins AIA Award

This display, one of four out of 125 exhibits singled out for special recognition, was used by PCA at the 1960 convention of the American Institute of Architects, in San Francisco recently.

Since then, the booth has taken top honors for outstanding design at two AIA regional meetings. The display features a hyperbolic paraboloid roof and a display of color transparencies of concrete masonry buildings.

News

NRMCA Publishes Radio Booklet

A very handy book of do's and do not's of mobile radio operations and a rules and regulations analysis has been published by NRMCA under a very long title: "Do's and Do Not's of Mobile Radio Operation in the Special Industrial, Business and Citizen's Radio Services and Analysis of the Rules and Regulations of the Federal Communications Commission Governing Licensing and Operations in the Special Industrial and Business Radio Services".

The book was prepared by Ernest W. Jennes and Stephen J. Pollak of Covington & Burling, the NRMCA general counsel.

The book is an excellent guide to daily operation of radios and to the many rules and regulations affecting operation. We recommend it to all members who either now operate two-way radio or plan to do so.

PCI Convention Exhibits Over 35% Toward Goal

First returns on exhibit space for the 6th Annual Convention of the Prestressed Concrete Institute to be held Sept. 27 through 30 in the Hotel Statler Hilton, New York are running in excess of expectations, according to Randall M. Dubois, president.

The current report presented by A. L. Patterson and A. F. Distasio, Co-chairmen, Exhibitors Committee, shows twenty manufacturers and service organizations concerned with the prestressed concrete industry have reserved 28 exhibit booths for the Convention.

"With this early return after our initial promotion", said Dubois, "the indications are definitely that exhibit space will be sold out long before our cut-off date of Sept. 1."

Those reserving space include: Elgood Concrete Services Corp., Brooklyn; Flexico Products Inc., Metuchen, N. J.; Food Machinery and

Chemical Corp., Lakeland, Fla.; Intercontinental Equipment Co., Inc., N. Y.; Kurt Orban Company Inc., Jersey City; Leschen Wire Rope Division-H. K. Porter Co., Inc., St. Louis, Mo.; The Master Builders Co., Cleveland; Pell Cable Cutter Co., Menlo Park, Calif.; Plant City Steel Corp., Plant City, Fla.; Raymond International Inc., N. Y.; John A. Roebling's Sons, Trenton, N.J.; Sika Chemical Corp., Passaic, N.J.; Soil-test Inc., Chicago; Stow Manufacturing Co., Binghamton, N. Y.; Stressteel Corporation, Wilkes Barre, Pa.; Superior Concrete Accessories Inc., Franklin Park, Ill.; Travelift & Engineering Inc., Sturgeon Bay, Wisc.; Union Wire Rope Corp., Kansas City, Mo.; and United States Steel Corp., Pittsburgh, Pa.

May Paving Yardage

Gordon Ray, manager of the PCA paving bureau, has announced the awards of concrete pavement for May as 6.2 million sq. yds. for roads; 3.4 million for streets and alleys; 308,637 for airports, for a total of 9.9 million sq. yds.

Figures for the first five months of 1960 total, in the same order, 26.1 million, 11.1 million, 2.3 million, for a total of 39.5 million sq. yds.

NRMCA PR Contest To Run Biennially

V. P. Ahearn, managing director, has announced that the NRMCA Public Relations Contest will be conducted biennially from now on. The first such competition took place this past year, with results announced at the annual meeting in February.

Ahearn has announced that entries should be submitted by August 31, 1961, with the early announcement designed to urge early development of the necessary material that will be the basis of the entry.

St. Louis UMA Sponsors Architectural Contest

All architectural members of the St. Louis AIA are being urged to enter a contest sponsored by the St. Louis Unit Masonry Association. The

purpose of the contest is to select outstanding building designs in which the use of masonry makes a significant contribution.

Eligible buildings for entries must have been substantially completed as of January 1, 1957. The date of the judging is October 25.

Remember NRMCA Change in Address, Phone

NRMCA has sent a reminder notice of their new office address and phone number, inasmuch as a quantity of mail is still going to the old address.

Since December 1, NRMCA has been at 1411 K St., N.W., Washington 5, D.C. The phone number now is REpublic 7-2315. No further mail should be sent to the old Munsey Building address.

It was also announced that the following changes in title were made at the last board meeting: Vincent Ahearn now has the title Managing Director, and Kenneth Tobin, Jr., is Associate Managing Director. Ahearn's former title was executive secretary.

\$100,000 Plant Planned in Spartanburg, S. C.

Spartanburg (S.C.) Concrete Co. has announced plans for building an auxiliary plant to its large ready mix operation, with cost estimated at \$100,000.

The auxiliary plant will be a ready mix operation replacing a facility on another site in Spartanburg. The new operation will not affect the company's big parent plant. The necessary re-zoning has been approved by the city council.

DeWitt Buys Dale

The W. D. Dale, Inc., ready mix plant at Penn Yan, N.Y., has been purchased by B. R. DeWitt, Inc., a large western New York producer of ready mix with headquarters in Pavilion. The new purchase brings the DeWitt plant total to 11.

STEARNS engineering offers . . .

ELECTROMATION

*for the finest automatic
block plant equipment today.*

One of the many exclusive features of this new Stearns "advanced design" automatic rack loader and unloader is an independently operated pallet accumulator (shown here No. 1).

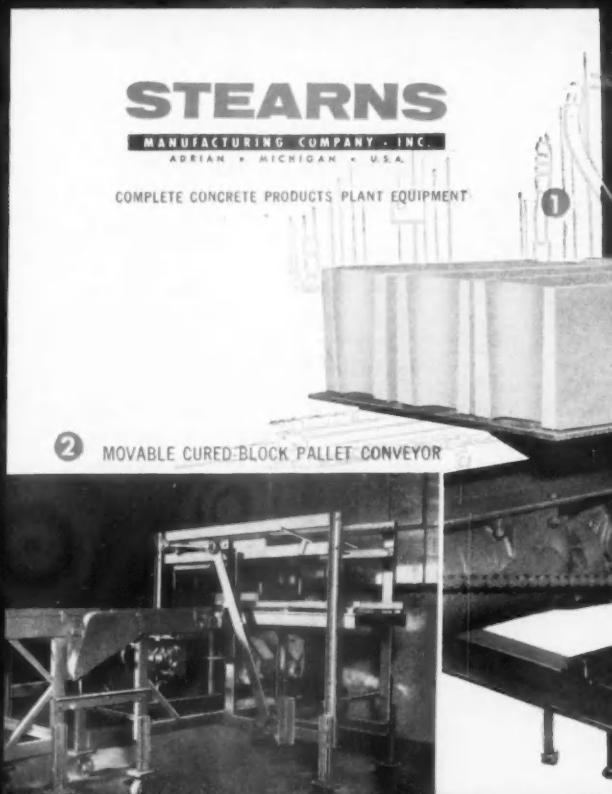
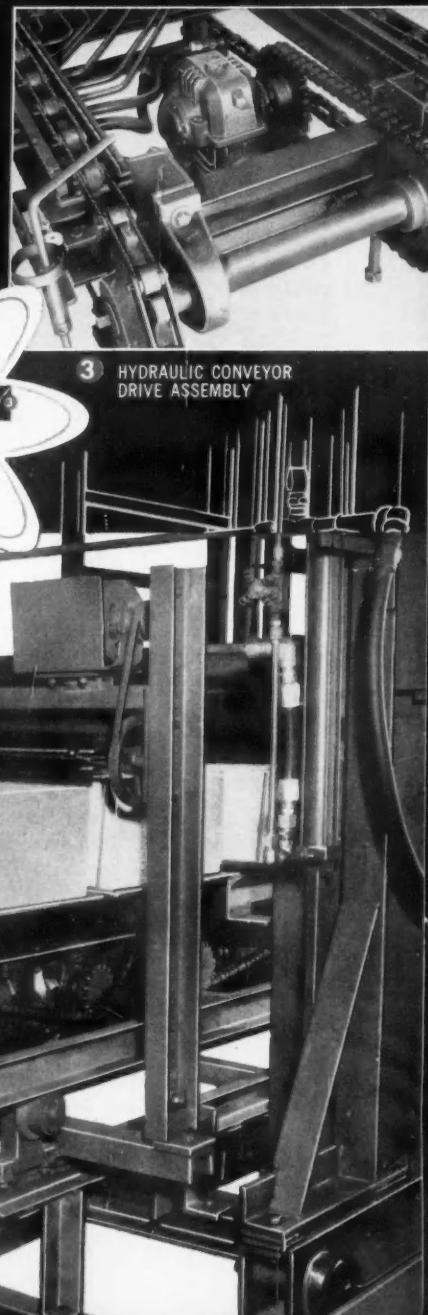
It is multiple-driven to allow a surge of six pallets between the block machine and the automatic rack loader.

Another important and desirable feature is that the accumulator is retractable, to provide ample access to the front of the block machine for mold box change, clean up, etc. Write today for full particulars.

STEARNS

MANUFACTURING COMPANY - INC.
ADRIAN - MICHIGAN - U.S.A.

COMPLETE CONCRETE PRODUCTS PLANT EQUIPMENT



Nicholson Concrete, Toledo Plaster Merging

Assets of Nicholson Concrete Co. are being merged with those of Toledo Plaster & Supply Co., with the company name being changed to Nicholson Concrete & Supply Co. The announcement was made by Pres. J. A. Nicholson.

Nicholson also announced that the company has taken over the property of Hirzel Coal & Builders Supplies as a location for a ready mix plant. Ernest R. Hirzel, founder of the Hirzel firm, is retiring. Ernest H. Bollinger, Hirzel's grandson, will be manager of the Hirzel branch for Nicholson.

El Dorado Firms Merge

Two El Dorado, Ark., firms, Prestressed Concrete Inc. and Gilliam Brothers, Inc., have merged. Henry and Julian Gilliam, both of El Dorado, own interests in both corporations, with the new firm to be known as Gilliam Brothers, Inc.

Indiana Consumer Plant Holds Open House

The new electronically operated ready mix plant of Consumer's Concrete Co. was recently officially opened in northern Indiana, near Michigan City and Chestertown. An open house was held in early June, showing off the punch card batching facilities.

Hanna Purchases RM Plant in Green Bay

The ready mix and coal operation of F. Hurlbut Co., Green Bay, Wis., has been purchased by North Western-Hanna Fuel Co., according to an announcement by Martin Burke, Jr., Hanna president.

Hanna has a large network of docks in the Lake Michigan area, and operates a ready mix plant in Menominee, Wis.

According to the announcement, Hurlbut will continue in the block, pipe and products business, having sold only the ready mix and coal part of their operation.

Meetings

September 12-13, 1960

NCMA, Region IV meeting, San Francisco, Calif. (Note that meeting sites for regional meetings were not made available. Check locally.)

September 15-16, 1960

NCMA, Region IV meeting, Portland, Oregon.

September 18-20, 1960

Ready Mixed Concrete Assoc. of Toronto, annual meeting, Delawana Inn, Honey Harbor, Georgian Bay, Ontario, Canada.

September 19-20, 1960

NCMA, Region V meeting, Omaha, Nebraska.

September 26-27, 1960

NCMA, Region III meeting, San Antonio, Tex.

September 27-30, 1960

Annual convention, Prestressed Concrete Institute, Statler-Hilton Hotel, New York City.

October 3-5, 1960

Semi-annual meeting, board of directors, NRMCA, Del Monte Lodge, Pebble Beach, Calif.

October 27-28, 1960

New York State Concrete Masonry Assoc., annual meeting, Sheraton-East Hotel, New York City.

October 31-November 2, 1960

ACI Regional meeting (joint meeting with ASTM), Pioneer Hotel, Tucson, Ariz.

November 14-18, 1960

NRMCA, 15th annual short course, University of Maryland, College Park, Md.

December 5-6, 1960

Midwest Ready Mixed Concrete Assoc. Annual short course, Purdue Univ., Lafayette, Ind.

January 5-7, 1961

Prestressed Concrete Symposium, Norges Tekniske Høgskole, Trondheim, Norway.

January 9-11, 1961

Ohio Ready Mixed Concrete Assoc., Driver Training Course, Sheraton Cleveland Hotel, Cleveland, Ohio.

January 23-26, 1961

NRMCA, 31st annual convention, Hotel Americana, Bal Harbour, Fla.

Jan. 30-Feb. 2, 1961

NCMA, 41st annual meeting, Concrete Industries Exposition, Cobo Hall, Detroit, Mich.

February 20-23, 1961

ACI, 57th annual meeting, Chase-Park Plaza Hotel, St. Louis, Mo.

Put your finger on a

NEW, PROFITABLE READY MIXED CONCRETE MARKET

... Sell concrete for highway construction with a BUTLER HP-85 Portable Ready Mixed Concrete Plant

READY MIXED OPERATORS ... Take advantage of the swing to ready mixed for highways. It's a new source — an additional source — for substantial profits.

And the highway contractor will welcome you as a prime contributor to greater earnings in his pocket. Here's why:



With his purchase of ready mixed concrete from you, he eliminates a \$50,000 dual drum paver.



And he eliminates a high-priced, 5 man paver crew

— as well as a batching plant and batch trucks.



With concrete from your completely automated BUTLER HP-85 Portable Plant, the contractor gets a uniform, inspector-pleasing, non-segregated mix, pin-pointed to any specification —



and he speeds up his job with less supervisory headaches and overhead.

Production up to 200 cubic yards an hour

A Butler HP-85 Portable Ready Mixed Plant, completely automated, equipped with two turbine-type mixers, easily charges your transit mix trucks at the rate up to 200 yards an hour. That's enough to keep ahead of any highway demand — without a single bead of sweat.

And Butler simplified, in-place, quick-connected automation is interlocked against human error. You have faster batching for every material, water included, with a perfection in accuracy that makes friends of tight specifications, the inspector and your contractor-customer.



BUTLER BIN COMPANY

991 Blackstone Avenue

• Waukesha, Wisconsin

On a highway job, a move to the next section is made as quickly as with a batching plant — in fact faster than most.

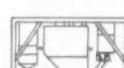
**WITH BUTLER PROFIT-
PORTABILITY YOU
SELL HIGHWAY
CONCRETE 100...
200...500 MILES
FROM YOUR OFFICE**

*Here's a picture story of
transport and erection — the
ultimate in portability.*

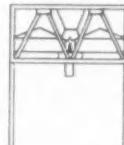
- The compartmented bin section ships complete with lugs attached for crane lift.



- Batcher section is a complete unit with all piping, wiring, batchers and automatic controls in place, ready for plug-in.



- Mixer section is also a complete unit with two turbine mixers, gates and controls pre-installed. Circuitry is completed with plug-in quick connectors. Support columns ship separately. These are quickly pinned to the mixer platform and swing into place as the mixer section is raised.



For healthy business and profit growth in this new market, send for the new, detailed BUTLER HP-85 Bulletin. Just jot your request on a postcard. You'll get a prompt reply.

ALPHA

BETTER CONSTRUCTION THROUGH
BETTER USE OF CEMENTS

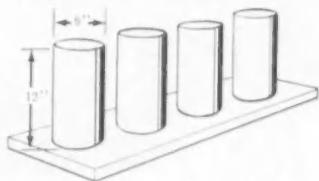
news and notes from the field

CONCRETE TEST CYLINDERS—the right way to make them

A concrete test specimen seldom seems very important at the time it is being made. However, if trouble develops with concrete on a job, the test specimen immediately becomes a critical factor, regardless of the size of the project.

A concrete producer can guarantee concrete strength only if test specimens are made and cured according to standard methods. Concrete compression tests are made to determine concrete quality. If curing conditions, methods of sampling and methods of casting are allowed to vary, strength results are worthless because one can seldom determine whether a low strength is due to poor quality concrete or poor practices after concrete left the ready mix truck. For reliable test results, the following test procedures should be followed:

1. Use only non-absorptive molds



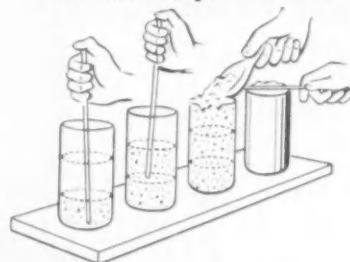
Steel, or paraffin-sprayed paper molds, 6" in diameter by 12" high, are usually used for casting concrete cylinders in the field. Before filling, they should be placed on a smooth, firm, level surface. A single strength test is generally defined as consisting of an average of 3 standard test specimens. Therefore, be sure to make at least 3 cylinders for each age test—usually 7 and 28 days.

2. Take sample from 3 parts of load



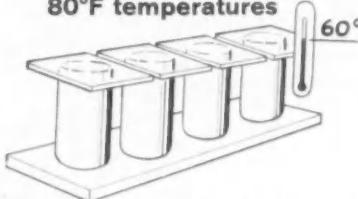
A sample should be obtained from at least 3 parts of the load and taken directly from the truck or mixer discharge. Before filling the molds, the individual portions of the sample should be thoroughly re-mixed in a large flat pan, wheelbarrow or on other clean, non-absorptive surface.

3. Fill molds in 3 layers and rod each layer 25 times



Molds should be filled in 3 equal layers, and each layer rodded uniformly 25 times with $\frac{3}{8}$ " bullet-pointed rod. When rodding upper layers, the rod should just extend through into the layer underneath. All molds should be filled uniformly—that is, place and rod the bottom layer in all samples, then the 2nd layer, etc. The 3rd layer should contain an excess. After tapping sides of mold with rod, strike off excess with trowel.

4. Let cylinders stand from 12 to 24 hours in 60° to 80°F temperatures

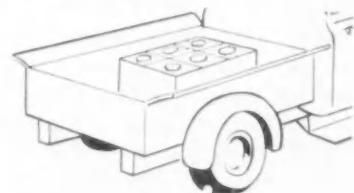


Cylinders should be left undisturbed until they have hardened enough to withstand handling—from 12 to 24 hours after casting. Tops should be covered with glass plates, oiled paper, wet burlap or similar material to prevent loss of moisture. The temperature should not drop below 60° or rise above 80°F where cylinders are stored. Cylinders left on the job for several days at low or high temperatures will give erratic results unless carefully protected.

5. Cure and handle cylinders with care

After setting for 12 to 24 hours, cylinders should be placed in moist curing at 70° or

sent to a laboratory for standard curing. Careful handling is still necessary since cylinders which are allowed to rattle around in a box, or the back of a car, or pickup, can suffer considerable damage. Use sawdust or similar material for cushioning.



Use a bullet-nose rod

The purpose of rodding test cylinders is to compact the concrete and make it free of the large air voids which reduce strength. Too many people reach for the handy piece of reinforcing steel to rod the concrete. Some just kick the mold instead of rodding. It has been found that the bullet-nose $\frac{3}{8}$ " rod does the job best for two reasons:



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ALPHA

PORLTAND CEMENT COMPANY

Alpha Building, Easton, Pa.

Quotes

Informal news concerning people, plants and products

What will probably be the biggest single promotion by the concrete industry will be announced soon. We were given an advance look at this but can't give any official news till later (probably in next month's issue). It'll be a big effort, covering all of the concrete industry, and including two huge organizations outside of our field.

We can tell you that the big pitch will be tied to a national model home theme with armloads of advertising, promotion, publicity country-wide. It'll hit just about all cities and states.

Our reason for being a little vague is this: the promotion will take place, but not all details and participants were set as of this writing-time. We know the details and plans, and believe us this will be about the largest concentrated boost for our concrete people yet.

Now, to some new business.

A new ready mix plant is to be built in Wagner, S. D., we hear. Lawrence Soukup will operate the plant, which will be in operation before long. The local chamber of commerce pushed the idea.

A state away, North Star Concrete Co., in Mankato, Minn., opened its new concrete stressing plant at Osseo in June. Cost, \$250,000; 40 acre site; 18 employees.

A newspaper report says that the new Durox plant being built in San Bernardino, Calif., already has \$1 million in orders booked. A San Berna-

dino hotel will be the first customer. The plant, according to our report, was supposed to be running by May or June, under the official name of Durox of Southern California.

Barrett Industries, down in San Antonio, has added its fifth ready mix batching operation, with the new plant located (as are the other four) on the city perimeter. Firm also has put in 10 new trucks.

Another outfit that's using new trucks is Syracuse (N.Y.) Ready Mix Concrete Co. The unusual point here is that this is one of the first applications of short-haul use of diesel engines, used in B-42 Mack trucks. The trucks seldom leave the Syracuse vicinity. Art Gessler, Syracuse president, reports that the Cummins-powered trucks use about half as much diesel fuel, compared to gasoline powered trucks in similar service. Diesels, as you probably know, haven't been used much in this industry for short-haul work.

Bruce Hall & Sons (in RM in Richfield Springs, N.Y.) have added a new concrete silo to speed up service. The \$10,000 investment resulted in a 300 bbl. silo.

Walter E. Shull has been named safety manager of the Concrete Industries Board of Dallas. The organization has also opened new offices at 10665 Harry Hines Boulevard.

Some Dade and Broward County (in Florida) block plants are promoting use of two-core block, said to be available there after July.

Mazur Block Co. has expanded their Wauregan, Conn., operation with the addition of a new Lithibar 420 hydraulic block machine.

Central Reddi-Mix, Inc., of Chehalis, Wash., has purchased a four acre site for a new ready mix and building supply operation.

A building permit has been issued for a \$20,000 RM plant to be built in Niles, Ohio by Austintown Concrete & Supply Co.

By purest coincidence, both this magazine and the July issue of Home & Garden ran large sections showing contemporary uses of concrete in architecture. Each section also ran about 15 pages.

Valley Concrete Buys Certified Concrete

Valley Concrete Co., of Rocky Ford, Colo., has purchased a substantial interest in Certified Concrete Co., Pueblo, according to Valley president Earl J. Brubaker.

John Lindeman, assistant manager of Valley, has been named Pueblo general manager.

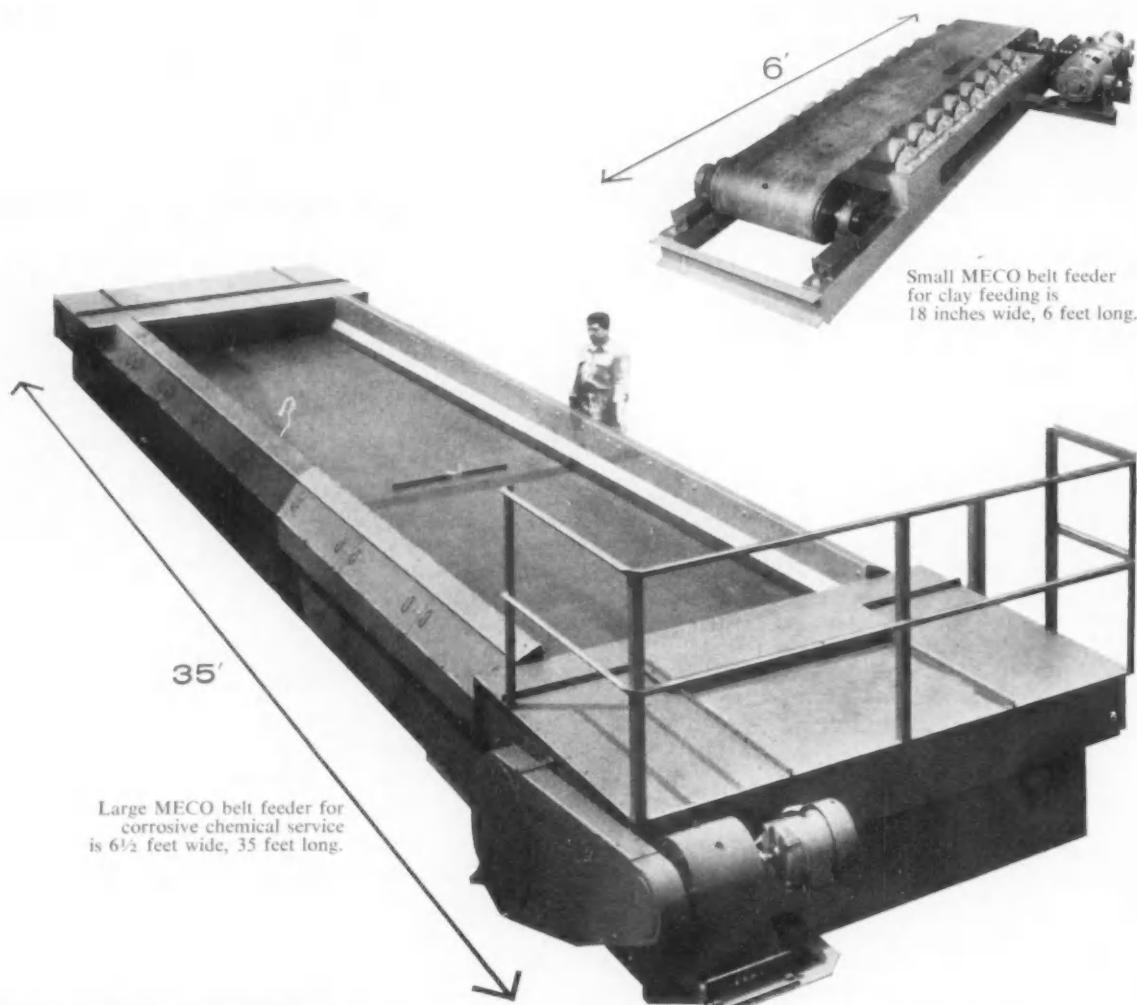
Havre RM Buys Northern RM

Northern Ready Mix, Inc., has been purchased by another local plant, Havre (Mont.) Ready Mix Concrete Co. Homer Randolph and Otto, William and James Baltrusch operate the latter firm.

Central Idaho Assoc. Formed

Meetings have been held to organize the Central Idaho Concrete Products Assoc. Current members are Lewiston Premix Concrete, Inc.; Dunclick, Inc.; and Conco, Inc.

Gifford Dundas, of Dunclick, and Robert Sloat, Lewiston, are acting as officers till a meeting is held. Eventual membership planned is 10 to 15 companies.



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ENGINEERED BULK MATERIALS HANDLING EQUIPMENT

Production and Value of Ready Mixed Concrete in 1959

by
Kenneth E. Tobin, Jr.
Associate Managing Director
NRMCA

The National Ready Mixed Concrete Association has completed its ninth annual survey of the production and value of ready mixed concrete. This survey is designed to fill the need for a reliable measurement of the contribution the ready mixed concrete industry makes each year to the national economy.

1,589 Returns

Questionnaires were sent to the 3,647 ready mixed concrete companies in the United States and Canada of whom we have record. Returns were received from 1,589 companies. In addition to the returns received from 1,589 companies, pro-

duction data were also available on 198 member companies which did not return the questionnaire. These data have been incorporated in the study wherever possible, making a total participation of 1,787 companies, or 49 per cent of the companies surveyed.

The participating companies reported a total production in 1959 of 95,731,365 cubic yards, valued at \$1,309,118,567, at an average value of \$13.67 per cubic yard. The years 1958 and 1959 offer a basis for a fairly exact basis for comparison in view of the virtually identical participation of reporting companies during these two years. While there was a substantial increase in ready mixed concrete production in 1959 as compared with 1958, the average value per cubic yard declined from \$13.71 in 1958 to \$13.67 in 1959.

In the past, we have been able to make only what we believed to be reliable assumptions as to the amount of ready mixed concrete production for which companies not participating in our surveys were responsible.

Cement Shipments

After consideration of this question at a meeting of the Board of Directors of the Association last year, it was decided to ask the U. S. Bureau of Mines, which makes monthly and yearly studies of portland cement production and shipments, to inquire of the reporting portland cement manufacturers whether they would be willing to report to the Bureau on the amount of cement shipped to ready mixed concrete producers. The interested manufacturers advised the

Continued on next page

Table 1

Ready Mixed Concrete in 1956, 1957, 1958, 1959

	1956	1957	1958	1959
Companies surveyed	2,314	2,474	3,481	3,647
Companies reporting	1,247	1,312	1,792	1,787
Production (cu. yds.)	73,161,996	71,582,473	81,293,451	95,731,365
Total value	\$962,626,686	\$961,096,209	\$1,114,355,650	\$1,309,118,567
Average value (per cu. yd.)	\$13.16	\$13.43	\$13.71	\$13.67
Portland cement consumed (bbls.)	97,300,000	95,200,000	108,000,000	127,000,000
Sand and coarse aggregate consumed (tons)	117,000,000	114,500,000	131,000,000	154,000,000
Production of lightweight concrete (cu. yds.)	—	—	—	1,504,032
Average production	58,670	54,560	45,365	53,571
Median production	29,253	28,436	23,427	24,831

1959 total includes 198 member companies not actually replying to the questionnaire but whose production of 13,455,018 cubic yards was otherwise available.

1959 totals of portland cement, sand and coarse aggregate consumed are Association estimates based on actual reported production of 82,276,347 cubic yards of concrete. The estimates assume a cement consumption of 1.33 barrels per cubic yard of concrete and a sand and coarse aggregate consumption of 1.6 tons per cubic yard of concrete.

The average production was determined by dividing the total production by the number of reporting companies; the median production is that of the "middle" company — i.e. in this sample of 1787 companies, the 893rd company from the top.

Table 2

Ready Mixed Concrete Production
and Value in 1959, by States

State	Number of Companies	Total Production (cu. yds.)	Total Value \$	Average Value Per cu. yd.	Average Retail Price(1)	Average Wholesale Price(1)
Ala.	27	1,159,348	\$ 14,997,743	\$12.94	\$14.01	\$12.98
Alaska	3	68,034	2,007,165	29.50	28.83	27.93
Ariz.	10	1,095,153	13,379,013	12.22	14.07	14.06
Ark.	11	357,954	4,327,604	12.09	13.68	13.50
Calif.	106	12,214,616	151,056,457	12.36	13.63	12.56
Colo.	13	980,997	12,483,162	12.72	12.99	12.84
Conn.	23	1,041,892	14,402,098	13.82	14.13	13.52
D. C.	5	1,006,522	14,375,029	14.25	13.61	12.53
Fla.	61	4,680,166	76,721,381	14.45	15.47	14.53
Ga.	26	769,113	11,033,227	14.35	15.07	13.75
Idaho	5	250,744	3,605,382	14.38	15.00	14.98
Ill.	86	6,744,338	88,684,488	13.15	14.94	14.03
Ind.	76	2,463,011	33,403,561	13.56	13.68	13.05
Iowa	100	1,583,951	22,945,141	14.48	14.41	13.36
Kan.	43	1,495,853	18,486,089	12.36	12.97	12.17
Ky.	20	754,324	10,907,770	14.46	14.33	13.84
La.	36	1,892,562	26,570,500	14.04	15.53	14.91
Maine	5	146,590	1,979,128	13.50	13.74	12.69
Md.	22	1,623,776	23,155,622	14.26	14.59	13.96
Mass.	28	2,105,672	26,299,715	12.49	14.28	13.63
Mich.	98	3,846,480	54,048,098	14.05	14.45	14.04
Minn.	36	1,790,378	25,361,212	14.16	14.99	13.95
Miss.	21	585,665	7,881,281	13.46	13.57	12.98
Mo.	36	2,654,936	34,607,254	13.04	14.57	13.07
Mont.	13	267,543	4,453,348	16.65	16.64	15.58
Neb.	27	1,029,724	14,477,003	14.06	13.04	12.05
Nev.	4	279,177	4,186,211	14.99	15.41	14.48
N. H.	7	128,662	2,009,442	15.62	15.91	14.80
N. J.	21	1,319,340	18,902,433	14.33	14.64	13.86
N. M.	17	530,765	6,880,712	12.96	14.45	14.16
N. Y.	76	5,724,959	87,086,266	15.21	15.49	14.61
N. C.	32	1,018,896	15,268,444	14.99	15.58	14.40
N. D.	4	119,456	1,877,968	15.72	15.89	15.35
Ohio	125	6,328,613	90,278,183	14.31	14.80	14.01
Okla.	40	1,686,370	22,865,920	13.56	13.97	13.29
Ore.	40	1,065,506	14,104,126	13.21	14.80	13.98
Pa.	114	4,367,348	63,204,863	14.47	15.84	14.87
S. C.	13	518,250	7,266,574	14.02	14.47	13.67
S. D.	7	201,515	2,885,255	14.32	14.61	13.48
Tenn.	55	2,245,491	31,292,853	13.94	14.26	13.25
Texas	79	6,108,539	75,554,754	12.37	14.36	13.92
Utah	13	752,665	9,060,352	12.04	12.16	11.47
Vt.	4	58,443	905,171	15.49	14.58	14.33
Va.	35	1,675,594	24,081,622	14.37	14.78	14.36
Wash.	29	1,187,632	16,708,480	14.07	14.75	14.13
W. Va.	16	516,833	8,662,978	16.76	17.10	16.03
Wis.	72	2,012,257	26,317,214	13.08	14.04	12.86
Other (2)	13	1,353,698	20,658,283	15.26	14.99	15.40
Canada	34	3,922,014	47,411,992	12.09	14.30	12.98
Totals(3)	1,787	95,731,365	\$1,309,118,567	\$13.67	\$14.59	\$13.78

(1) Based on price, before discount, per cubic yard of concrete in the first delivery zone, for a mix with five sacks of cement per cubic yard.

(2) Includes all states and territories where less than three companies reported. (Delaware, Hawaii, Puerto Rico, Rhode Island, and Wyoming.)

(3) 1959 total includes 198 member companies not actually replying to the questionnaire but whose production of 13,455,018 cubic yards was otherwise available.

Bureau that they would be willing to answer this question.

Now we have for the first time a figure on the amount of portland cement shipped in a given year to the ready mixed concrete industry, having been advised by the Bureau that the cement manufacturers reporting to them shipped 52 per cent, or 174-million barrels, of their total production of portland cement in 1959 to ready mixed concrete producers. This information was supplied by cement manufacturers who produced 85 per cent of the total cement output in the United States.

Total Production

The average cement consumption per cubic yard of concrete is assumed to be 1.33 barrels. We can now say that the total production of ready mixed concrete in the United States in 1959 was approximately 130,500,000 cubic yards. The participating companies in our survey consumed 127,000,000 barrels of cement.

Thus it follows that these companies were responsible for approximately 75 per cent of the total ready mixed concrete production in 1959.

In our report last year on production and value of ready mixed concrete in 1958, we estimated that the reporting companies were responsible for about 80 per cent of the total production. This estimate compares quite favorably with the specific factual information which we now have, thanks to our reporting companies and to the cooperation of portland cement manufacturers with the Bureau, on the total ready mixed concrete production in 1959.

Turning once again to the data provided by the companies which reported to the Association, it will be seen that the average production per company and the median production increased substantially in 1959 when compared with 1958.

Average production per company in 1959 was 53,571 cubic yards, an increase of 8,206 cubic yards from the 1958 average of 45,365 cubic yards, or 18 per cent. Similarly, median production increased to 24,831 cubic yards in 1959 from 23,427 cubic yards in 1958.

Based on the reported production of 95,731,365 cubic yards of concrete, we estimate that the reporting

ready mixed concrete producers used approximately 127-million barrels of portland cement and 154-million tons of sand and coarse aggregate. This estimate is based on the assumption of an average sand and coarse aggregate consumption of 1.6 tons per cubic yard of concrete and the average cement consumption of 1.33 barrels per cubic yard of concrete referred to above.

Our survey includes this year data for the first time on the production of lightweight concrete. This additional information was requested by our Board of Directors in order to develop a complete picture on production and value of all types of ready mixed concrete. The reporting companies produced in 1959 a total of 1,504,032 cubic yards in lightweight concrete. We will continue to develop this additional information in future surveys.

Production By States

California led all states with a reported production of 12,214,616 cubic yards, valued at \$151,056,457. Illinois took second place, reporting a production of 6,744,338 cubic yards, valued at \$88,684,488. Ohio ranked third with a reported production of 6,328,613 cubic yards, valued at \$90,278,183. Texas was fourth in total production with 6,108,539 cubic yards reported, valued at \$75,554,754.

Ohio led all states in total number of companies reporting with 125; Pennsylvania with 114, California with 106, and Iowa with 100, followed in that order. The average value per cubic yard ranged from highs of \$29.50 in Alaska, \$16.76 in West Virginia and \$16.65 in Montana to lows of \$12.04 in Utah and \$12.09 in Arkansas and Canada.

Concrete Prices

Table 2 includes additional information for the first time this year on the average retail price and the average wholesale price per cubic yard of concrete.

The Board of Directors believes that this additional information will increase the value of the survey, since these latter figures are based on the average price for a specific mix and, therefore, provide comparable bases for comparison.

The average retail price and average wholesale price presented in Table 2 are based on price before discount per cubic yard of concrete in the first delivery zone for a mix with five sacks of cement per cubic yard.

Table 3 presents for the first time in our annual survey a breakdown of lightweight concrete production by states. The table includes data on the total production of all types of ready mixed concrete in each state, separate data on the total lightweight concrete production in each state, and the percentage which the reported production of lightweight concrete represents of the total production of all types of concrete.

The table indicates that 1,504,032 cubic yards of lightweight concrete were produced by companies with a total production for all types of concrete of 82,276,347 cubic yards, or 1.83 per cent of the total ready mixed concrete production.

Markets

Home building continues to be the largest market for ready mixed concrete, accounting for 35 per cent of the total production. The 35 per cent consumed by the home building market represents an increase in the percentage consumption by this largest consumer of 2 per cent over the 33 per cent of total production reported in our 1958 survey and 6 per cent over the 29 per cent reported in our 1957 survey.

The other consumption categories retained the same ranking as in 1956, 1957 and 1958, with commercial construction in second place, accounting for 19 per cent of the total, 1 per cent greater than reported in 1958; industrial construction in third place, accounting for 14 per cent of the total, also 1 per cent greater than reported in 1958; highway construction in fourth place, accounting for 10 per cent of the total, a decrease of 1 per cent from 1958; non-Federal public works in fifth place, accounting for 7 per cent of the total, also a decrease of 1 per cent from 1958; Federal public works in sixth place, accounting for 6 per cent of the total, an increase of 1 per cent over 1958; and farm construction in seventh place, accounting for 2 per cent of

Continued on next page

Table 3

Lightweight Concrete Production
in 1959, by States

State	Number of Companies	Total Production (1) (cu. yds.)	Lightweight Concrete Production	
			Total Lightweight Concrete (cu. yds.)	Percent of Total Production
Ala.	24	974,386	9,334	0.96
Alaska	3	68,034	—	0.00
Ariz.	9	1,080,153	2,770	0.26
Ark.	9	315,454	1,418	0.45
Calif.	92	10,650,053	162,096	1.52
Colo.	12	958,681	12,930	1.34
Conn.	21	956,892	8,708	0.91
D. C.	5	1,006,522	11,700	1.16
Fla.	51	4,051,400	14,644	0.36
Ga.	24	714,767	18,060	2.53
Idaho	3	125,744	280	0.22
Ill.	75	5,002,872	163,678	3.27
Ind.	65	1,923,223	7,792	0.41
Iowa	95	1,406,651	7,081	0.50
Kan.	40	1,388,457	7,338	0.53
Ky.	19	635,334	10,966	1.73
La.	32	1,621,813	42,046	2.59
Maine	5	146,590	125	0.09
Md.	18	1,414,501	3,888	0.27
Mass.	25	1,800,672	28,368	1.58
Mich.	88	3,336,617	43,783	1.31
Minn.	34	1,660,378	6,853	0.41
Miss.	20	555,665	11,886	2.14
Mo.	34	2,628,936	72,171	2.75
Mont.	13	267,543	235	0.09
Neb.	26	1,001,724	3,375	0.34
Nev.	4	279,177	9,249	3.31
N. H.	5	87,183	188	0.22
N. J.	15	965,724	12,820	1.33
N. M.	14	466,526	2,495	0.53
N. Y.	71	5,173,952	381,892	7.38
N. C.	29	980,296	42,548	4.34
N. D.	4	119,456	130	0.11
Ohio	115	5,697,994	55,174	0.97
Okla.	39	1,683,370	11,619	0.69
Ore.	38	1,012,767	11,999	1.18
Pa.	101	3,977,090	23,880	0.60
S. C.	13	518,250	17,976	3.47
S. D.	7	201,515	10,772	5.35
Tenn.	51	2,044,773	10,688	0.52
Texas	60	5,039,475	193,821	3.85
Utah	13	752,665	4,180	0.56
Vt.	3	39,026	—	0.00
Va.	28	1,280,741	18,084	1.41
Wash.	25	909,461	16,555	1.82
W. Va.	14	496,833	3,222	0.65
Wis.	65	1,753,521	10,713	0.61
Other (2)	10	1,145,153	4,230	0.37
Canada	22	1,955,337	12,272	0.63
Totals	1,589	82,276,347	1,504,032	1.83

(1) Including production of lightweight concrete.

(2) Includes all states and territories where less than three companies reported. (Delaware,

Hawaii, Puerto Rico, Rhode Island, and Wyoming)

NRMCA continued . . .

the total. Other uses accounted for slightly more than 3 per cent.

Approximately 6 per cent of the reported 82,276,347 cubic yards was not specified as to type of consumer.

Production Methods

The survey reveals that 78 per cent of the total yardage reported was produced by transit mixing, an increase of 1 per cent from the 77 per cent produced by transit mixing reported in our 1958 survey and 4 per cent from the 74 per cent reported in our 1957 survey. California, New York, Texas and Ohio, in that order, produced the greatest amount of transit mixed concrete.

Pennsylvania, Ohio and California, in that order, produced the greatest amount of concrete by central mixing. The 1,589 companies furnishing

the data reported operation of 3,003 plants. Of the 3,003 plants, 2,601 were proportioning plants and 402 were central mixing plants.

The largest number of companies are in the three smallest brackets: 0 - 10,000 cubic yards, in which there are 394 companies, responsible for 2.5 per cent of the total production; 10,000 - 20,000 cubic yards, in which there are 375 companies, responsible for 5.7 per cent of the total production; 20,000 - 30,000 cubic yards, in which there are 265 companies, responsible for 6.8 per cent of the total production.

These 1,034 companies, representing almost 60 per cent of the companies reporting, produced approximately 15 per cent of the total reported production. Seventeen companies produced more than 500,000 cubic yards of ready mixed concrete last year, accounting for almost 18 per cent of the total production.

The 1,589 companies contributing data used in this table reported ownership of 22,603 mixers and/or agitators, or an average of approximately 14 units per company. These 1,589 companies reported ownership of 2,673 stationary plants and 330 portable plants, or an average of approximately 2 plants per company.

In addition to the ten tables, our survey questionnaire developed this year for the second time information on the extent to which ready mixed concrete producers are engaged in closely related industries. Of the 1,589 companies, 370 companies, or 23 per cent, reported that they also produced concrete masonry products in addition to ready mixed concrete; 166 companies, or 10 per cent, are engaged in precast concrete operations; 134 companies, or 8 per cent, are engaged in the production of concrete pipe; 56 companies, or 4 per cent, reported prestressed concrete operations.

Table 6

Distribution of 1959 Ready Mixed Concrete Production by Size of Company

1959 Production (cu. yds.)	No. of Companies	Cubic Yards Produced	Percent Of Reported Production	Percent of Partici- pating Companies	Accumulated Percents Of Totals	
					Total Production	Total Companies
0-10,000	394	2,438,563	2.5	22.0	2.5	22.0
10,000-20,000	375	5,499,011	5.7	21.0	8.2	43.0
20,000-30,000	265	6,536,827	6.8	14.8	15.0	57.8
30,000-40,000	181	6,217,298	6.5	10.1	21.5	67.9
40,000-50,000	105	4,721,880	4.9	5.9	26.4	73.8
50,000-60,000	104	5,669,030	5.9	5.8	32.3	79.6
60,000-70,000	59	3,813,779	4.0	3.3	36.3	82.9
70,000-80,000	55	4,002,632	4.2	3.1	40.5	86.0
80,000-90,000	33	2,779,003	2.9	1.8	43.4	87.8
90,000-100,000	20	1,911,562	2.0	1.1	45.4	88.9
100,000-125,000	60	6,578,246	6.9	3.4	52.3	92.3
125,000-150,000	23	3,217,405	3.4	1.3	55.7	93.6
150,000-175,000	13	2,094,873	2.2	0.7	57.9	94.3
175,000-200,000	14	2,581,255	2.7	0.8	60.6	95.1
200,000-250,000	23	5,154,818	5.4	1.3	66.0	96.4
250,000-300,000	20	5,446,111	5.7	1.1	71.7	97.5
300,000-400,000	14	4,847,011	5.1	0.8	76.8	98.3
400,000-500,000	12	5,271,728	5.5	0.7	82.3	99.0
Over 500,000	17	16,950,333	17.7	1.0	100.0	100.0
Totals	1,787	95,731,365	100.0	100.0

This table does not include the 198 member companies which did not return our questionnaire, but whose total production of 13,455,018 cu. yds. of ready mixed concrete was otherwise available.

Promotion, Quality Control, Future Discussed at ECSA Meeting

The mid-year meeting of The Expanded Clay and Shale Association, held at The Dearborn Inn, Dearborn, Mich., July 7 and 8, was highlighted by a challenge to the lightweight aggregate industry to do a broader, more intensive job of sales promotion and advertising. Ronald G. Hardy of Syracuse, N.Y., president of the Association, headed the 2-day session.

"We have a great product that has a great story to tell to architects, engineers, builders and the entire construction business," the ECSA group was told by Melvin G. Cruzen, general manager of Light Weight Aggregate Corp. of Livonia, Mich., whose firm was host to the mid-year meeting. "We have outstanding test results and excellent performance histories to back it out. The time is close at hand to do an extensive marketing effort at an accelerated pace."

Papers and Tours

Several technical papers were presented at the two-day session, which also included a tour of the Light Weight Aggregate Corp.'s production facilities for "Beslite" l.w. aggregate in nearby Livonia and a tour of the Great Lakes Steel Corporation plant in Detroit, highlighted by an inspection of the world's largest sintering plant.

The annual meeting of the Association will be held in St. Louis in February in close proximity to the American Concrete Institute sessions in that city, it was decided by the board of directors.

A discussion on "Quality Control and Testing in Plant Laboratories to Assure Uniform Quality" was presented by Karl Nensewitz, manager, Besser Technical School, Alpena, Mich.

"Too much emphasis cannot be placed on the importance of careful testing under competent supervision," Nensewitz said.

"When conducting a test you should make a complete record of:

(1) Type and gradation of aggregate, (2) Moisture content of aggregate, (3) Batch proportions, dry weight basis, including type cement, additives, color, etc., (4) Amount of absorbed and added water, (5) Mixer type, size and speed, (6) Mixing procedure and time, (7) Moisture content of concrete, (8) Type machine including size and speed of drive and vibrator motors, machine cycle empty, number and location of vibrator weights, agitator off or on, cutoff bar setting above mold and automatic feed setting, (9) Feed and finish time, exact for each pallet, (10) Number each pallet and individual block, left, center and right, (11) Green block weight, (12) Complete dimension information on test units, (13) Type curing, (14) Preset time and temperature, also steaming, soaking and equilibrium factors, test unit location in kiln, control temperature and relative humidity conditions of all specimens during aging, (15) Resistance to impact (list age), (16) Shrinkage (list age), (17) Absorption (list age), (18) Compression (if not oven dry list relative humidity condition of hard concrete at time of test.)

ASTM, ACI Report

An activities report on American Society of Testing Materials and American Concrete Institute committee work was given by Lucas E. Pfeiffenberger, technical consultant for the association. Pfeiffenberger related moves to coordinate specifications and standards for lightweight aggregate, and gave highlights of the ACI annual meeting in New York City, the ASTM meeting in Atlantic City and several "task force" meetings. "We in the lightweight aggregate industry are selling two basic things," he said, "and these are strength and lightness of weight."

"What's in View for Lightweight Aggregate" was the theme of a forum discussion at Friday morning's ses-

sion, led by B. K. Powers, vice president of Virginia Lightweight Aggregate Corp., in Roanoke and chairman of the Technical Problems Committee.

A wide field of new and promising applications for lightweight aggregate was explored, with particular emphasis on what Mr. Powers termed the "great possibilities for lightweight aggregate in the clay-bonded units now coming in for much attention."

Powers said that lightweight aggregate can expect an important market from this area of use provided manufacturers take the initiative, do preliminary work and development so that block producers may be informed and interested.

Selling and Promotion

"How Lightweight Aggregate Is Sold in One of the Nation's Largest Population Areas" was the subject of an interesting presentation led by Melvin G. Cruzen of the host producing company. With him were Bob Richardson and Don Kirchner of Richardson-Shaw, Detroit advertising agency, who have the "Beslite" account.

Kirchner recounted the interesting story of how "Beslite" lightweight aggregate was promoted by magazine advertising and direct mail among architects, contractors and engineers.

T. R. Berger, executive secretary, in his six months report to the Association said that "Long term prospects for the 1960's are very good, and we have every confidence that lightweight aggregates will get a healthy share of this building surge when and as it develops."

He noted the recent decision of the United States Supreme Court on percentage depletion and said this "points up the need for remedial legislation by Congress to clarify the situation." He paid special tribute to the trade magazines "for their keen interest in our organization and their always cheerful cooperation."

Chamber's Construction Forecast For Last Half of '60

Text of Statement by Miles L. Colean, Consultant Economist, Washington, D. C., at the conference on the Business Outlook for the last half of 1960 sponsored by the Chamber of Commerce of the United States, June 24, 1960, at the National Chamber Building:

Expenditures for new construction in 1960 can be expected to come close to the amount reached in 1959.

For the first five months of this year, however, total expenditures are 2 per cent behind the same period last year. The drag is concentrated in new private dwellings, which are now 10 per cent behind last year's record dollar volume, and in government construction as a whole, which is off 11 per cent.

Gap Closing

At the end of May, the gap between this year and last in new dwelling expenditures was still widening; but it is important to note that the comparison is made against the most active period of 1959. After May the rate of spending consistently fell. Because of this situation, and because of the improving volume of new housing starts, we may confidently expect a narrowing and probably a closing of the gap as the year nears its end.

Aside from this element, new private construction is moving ahead satisfactorily. Activity in the non-housekeeping residential category, consisting of hotels, motels and dormitories, is now 21 per cent ahead of a year ago. Nonresidential building as a whole is 17 per cent ahead. Within this group, industrial building has a booming advance of 34 per cent—a striking reversal of the 16 per cent drop in expenditures during 1959. Commercial building, with a more modest gain of 10 per cent, is also ahead of its 1959 record.

Gains in the other areas of private nonresidential building are also impressive. Religious building and recreational building are maintaining about the same strong rates of growth that they did in 1959; while educational and hospital building have both turned last year's minuses into this year's moderate pluses.

Although there will be some shifting in ratios as the year proceeds, the outcome for nonresidential building as a whole should be a substantial improvement over 1959. In December of last year, I ventured the view that this improvement would amount to 15.5 per cent, compared to the gain so far this year of 17 per cent. I now feel sure that the forecast figure will be reached and it may be slightly exceeded.

Outside the private categories mentioned, farm construction, as may be expected from trends in farming income, is in a slump, but the evidence is that the slump is less than was expected. Privately owned public utility construction is showing steadily gaining strength and should end the year 5 per cent to 6 per cent ahead of last year's volume of activity.

Slump Unexpected

Government construction activity in 1960 was not assumed to show much if any increase over that of 1959; but a slump of the proportions so far indicated was certainly not expected. The greatest areas of weakness are in military construction, which is now off 28 per cent with no suggestion of improvement; educational building, which, although down 5 per cent from 1959 and thus apparently repeating its dreary 1959 performance, now shows a faint sign of a pick-up; and highway construction, which now prom-

ises to turn a first-five-months drop of 13 per cent into a slight plus for the year as a whole.

Aside from these classifications and public housing, in which a heavy drop of 38 per cent will probably be only slightly moderated, all other areas of government work are showing gains. Work in atomic energy has advanced 10 per cent; administrative building construction, through now lagging, is definitely on an upturn; sewer and water work is regularly advancing; public service construction, which was expected to slump following the completion of the Seaway, has developed a lead of 15 per cent over the first five months of 1959.

Steady Increase

I believe that we should expect a steady increase in the rate of expenditures for government construction work from here out. With the prospective increase in outlays for schools and highways and the continuance of the already strong gains elsewhere, the present difference from last year's volume will certainly decrease. I doubt now, however, that the advance can be sufficient to bring the total for this year up to the level reached in 1959. Rather, the probability is for a year-to-year drop of around 5 per cent. This would put prospective government outlays for the year at around \$15.4 billion.

The translation of this year's private construction performance into dollar figures involves some special difficulties because of the improvements that have been made by the Bureau of the Census in the methods of estimating the number of new family dwelling units started. The revised figures, which have just recently been published, indicate that, instead of the 1,342,800 private nonfarm dwelling starts previously

Continued on page 28

What's New in

EQUIPMENT and MATERIALS



Reverse Letters

A complete line of reverse letters for precasting inscriptions in concrete can now be obtained from Spillman, manufacturer of the Ezy-Stryp metal forms.

The letters, from $1\frac{1}{2}$ " to 6" in 15 sizes, are made of aluminum with pins for fastening to wood forms, metal forms or to handles for im-

pressing in concrete. Letters 2" and larger are also available in brass, drilled and tapped for bolting to metal forms.

Plaques with company names, advertising slogans, beam identification and other number or letter information for repeated casting are also available. The company has also designed a new type of $1\frac{1}{4}$ " brass slide letter for impressing in green concrete. These and other accessories are described in a 24 page catalog.

R. L. Spillman Co., Box 4167-S, Columbus 7, Ohio.

Enter U33 on Inquiry Card

Condensed Catalog

A new condensed catalog of vibratory materials handling equipment, vibrating parts handling equipment,

power rectification equipment, mechanical shaft seals, paper joggers and portable power tools is now available from Syntron.

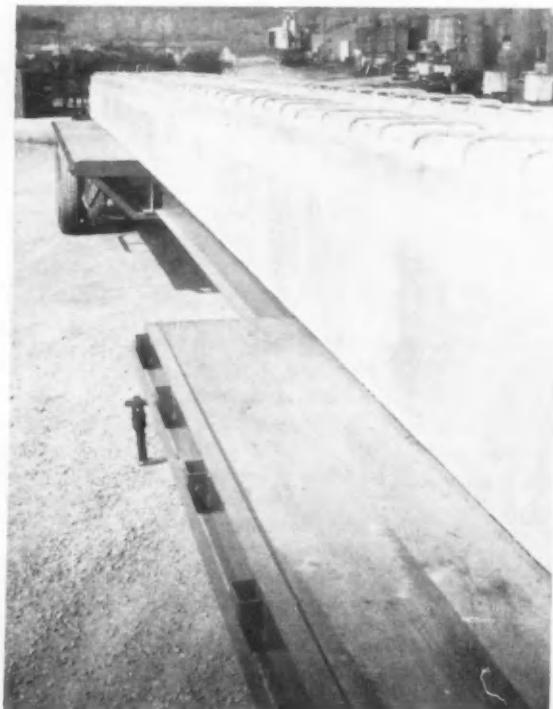
The 68 page catalog lists other items in the line, including car shakers and rappers, flow control valves and feeders, test sieve shakers, and concrete vibrators and floats.

Syntron Co., 324 Lexington Ave., Homer City, Pa.

Enter U34 on Inquiry Card

Vibrating Shaft

Oswalt has introduced a new vibrating shaft that is designed to provide a method of maintaining exact vibrations per cycle in machine operation. When necessary, the replacement of parts is inexpensive, simple,



2-In-1 Extendible Truck Trailer

An innovation in trailers can cut "special permit" hauls in half, since the trailer can extend to 55' or retract to 35' original length. The deck shortening and lengthening feature cuts the number of special permit hauls in half, since after delivery of an oversized load the truck returns closed to 35' legal length.

The pre-stressed concrete bridge beam being carried in the picture shown was 58' long and weighed 18 tons. The photo shows that there was no sagging of center members of the truck, and there was no center jack needed for closure. Detailed information is available from Rogers.

Rogers Brothers Corp., Albion, Pa.

Enter U35 on Inquiry Card

and the parts easily accessible. In replacing the sheave, a taper-lock bushing is removed; the old sheave replaced; the bushing re-set; the change made without disturbing the bearings or weights. Shaft parts can be ordered separately or as complete assemblies.

Oswalt Engineering Service Corp., 1335 Circle Ave., Forest Park, Ill.

Enter U36 on Inquiry Card

abruptly arrested when the head of the adjustable bolt strikes the machine frame. The shock frequently causes the green block to crack.

Bergen has developed a rubber shock absorber that practically eliminates the shock by cushioning the impact, reducing noise as well as wear and tear, and minimizing block cracking.

Bergen Machine & Tool Co., Inc., 189 Franklin Ave., Nutley 10, N.J.

Enter U38 on Inquiry Card

LW Concrete Booklet

Photographs and job reports show the wide variety of uses, and the growing use, of lightweight aggregate concrete in a 20 page publication. Thirteen construction projects are featured that used thin shell, beams and floor slabs, columns, multi-story structures, bridge decks, all of lightweight concrete.

The Master Builders Co., Cleveland 3, Ohio.

Enter U39 on Inquiry Card



Field Testing of Sand-Gravel Density

Tests of the density of non-cohesive materials, such as sand and gravel, can now be made at construction sites in the field with new test apparatus. In the test, oven dry samples of the test materials are placed in the cylinder and a 1000 lb. load is applied. A hammer is then struck against the outside of the cylinder to vibrate the test materials into a more confined volume; the number of blows needed is correlated with density. Tester can be used in lab or field, easily carried by one man.

Soiltest, Inc., 4711 W. North Ave., Chicago 39, Ill.

Enter U37 on Inquiry Card

Shock Absorber for Less Block Cracking

In making concrete block, when the stripper head frame comes down to eject the block its motion is

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SYNTRON Car Shakers transmit 900 powerful vibrations per minute throughout car to loosen and shake compacted material through hopper gates.

The Rotary Vibrator is a totally enclosed water proof unit. The vibrator is mounted in a sturdy steel frame designed to hook over light or heavy flanged car sides. A balancing counter-weight simplifies and contributes to the efficient vibrating action.

SYNTRON Car Shakers can be mounted anywhere along the length of the car—no chains or rods to tighten—no need to get in, on or under the car. Easily and safely handled with jib crane or fork lift.

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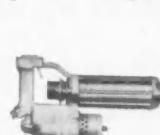
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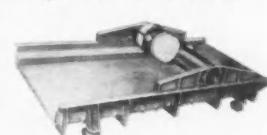
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ELECTRIC HAMMERS



VIBRATING SCREENS

NEW WRI BUILDING DESIGN HANDBOOK

Publication of the new WRI Building Design Handbook, has been announced by Wire Reinforcement Institute, Washington, D. C. The book is intended for use by designers, engineers, architects, consultants and others concerned with reinforced concrete construction.

The new 168 page handbook is divided into two parts. The first part

consists essentially of general text and pictures describing the ways in which steel wire fabric is put to effective use. Tables, sketches and detail drawings are included to help the design engineer and his draftsmen. Also in part one are several case histories of projects in which wire fabric has been used to particular, or unusual advantage.

The second part of the design handbook deals primarily with the rapidly widening use of *heavy* welded wire fabric, and, being principally



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a series of actual design tables (with necessary explanatory text) is expected to be a working tool in the actual design of structures. To make use of the tables more effective, several illustrative design problems are included.

In part two of the handbook are tables for one way slab design, with spans from $10\frac{1}{2}$ to 21 feet in conventional concrete, and spans $10\frac{1}{2}$ to 24 feet in lightweight concrete.

The two way flat slab tables, which afford the designer full use of heavy fabric's two way design capability, cover slabs of conventional concrete, and of lightweight concrete, both with and without drop panels, up to 26 feet square.

Tilt-up Tables

Also in the handbook are tables for designers of tilt-up concrete wall panels for 2 and 4 point pick-up design, in both conventional and lightweight concrete. Other tables cover design of vertically spanned basement walls, cantilevered retaining walls, and square individual column footings.

As an aid to the quantity take-off man, complete instructions are given on detailing and ordering welded wire fabric, including a sample framing plan and schedules.

The new handbook will be made available without charge to all bona fide inquirers, requesting it on an organization's letterhead. Address requests to Dept. BH-70, Wire Reinforcement Institute, 1049 National Press Building, Washington 4, D.C.

\$2.9 Billion in Federal Funds for Roads

Secretary of Commerce Frederick H. Mueller has announced that \$2.87 billion in Federal funds will be available to the states for obligation to highway work during fiscal 1961, which started July 1.

The 1961 total exceeds the \$2.7 billion available for 1960. Comparable previous figures were \$2.2 billion in 1957, \$2.7 billion in 1958, and \$3.2 billion in 1959.

Art Olsen Appointed to Conpro Sales Staff

The appointment of Art Olsen to the sales staff of Conpro, Inc., Minneapolis concrete products company, has been announced by LeRoy Nelson, president.

Redell Appointed To MB Buffalo Office

Thomas P. Redell has been named sales representative for the Buffalo, N. Y., territory for the Master Builders Co., it has been announced by Stephen W. Benedict, pres. Redell has been with MB since 1941.

Chicago Dispute About Prestressed Concrete

Confusion and controversy about the use of prestressed concrete was the result of a recent ruling by the Chicago building commissioner, George L. Ramsey. Chicago recently clamped tight restrictions on the use of prestressed concrete in the city.

Ramsey has said that he feels the material has not been proved under fire and load conditions, and warned that the city building code contains severe restrictions against the use of new materials. He further announced that any plans for use of prestressed should be reviewed with his department.

Ramsey said he based his action on what he called "incomplete engineering data and fire tests."

"Until we are satisfied with the material, we will not permit its use except where it will fit in the code," Ramsey said.

All of this is being hotly disputed

by concrete industry representatives, particularly by Norman Scott, executive director of the Prestressed Concrete Institute, with offices in Chicago.

According to a PCI news release, issued on the same day as Ramsey's announcement, PCI is now gathering data which will be presented to city officials to prove the fire safety of prestressed concrete.

Ramsey's main point appears to be a belief that "there is enormous deflection when the (prestressed) slabs are subjected to great heat."

This belief, Ramsey noted, was based on Underwriters' Laboratory tests.

Between the Chicago headquarters of both PCI and PCA, and the huge PCA testing laboratory in nearby Skokie where extensive testing of prestressed concrete has been done, there obviously is ample test information available.

Why and how the dispute began is obscure and confused, since the first many industry people knew of the situation was in reading Ramsey's announcement in the local newspapers.

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Photo, courtesy of Marmon & Son Inc.

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to clean—as concrete cannot harden to metal protected with Edi-Cote #103.

Edi-Cote #103 won't stain and discolor first batch as will drain oil—or weaken the concrete as will soluble oils!

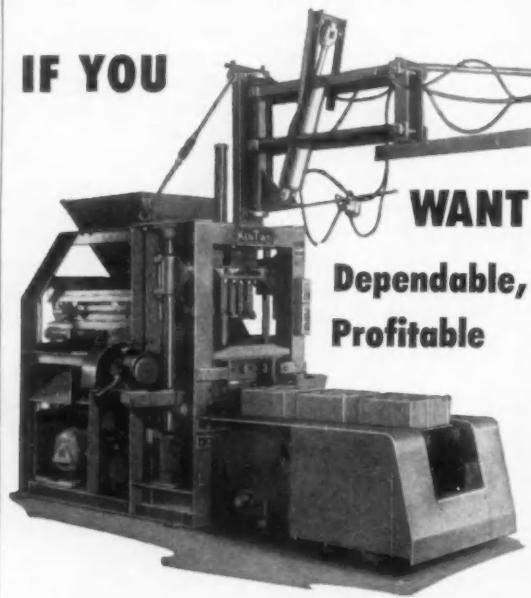
One application lasts all day! It pays to use the new Edi-Cote #103!

We guarantee—that if you use Edi-Cote #103 30 days as directed, and you are not satisfied—we will refund your money in full and pay you 6% interest, plus all freight costs!

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Maintenance Program Vital For Success of Two-Way Radio



By:
Frank J. Salichs
Vice President, Purchasing
Maule Industries, Inc.

The wise company makes sure its valuable equipment is kept in good operating condition. This is why Maule Industries, a major Florida concrete company, has taken advantage of a program designed to insure the continued operation of two-way mobile radio communications systems.

The program, offered by the radio equipment manufacturer, consists of both regular preventive and thorough emergency maintenance. Both of these are vital. The manufacturer has established a chain of qualified service stations throughout Florida.

Check Every 60 Days

These stations are staffed by experienced, licensed technicians who check out all of our radio equipment every 60 days and are on constant call in the event of breakdowns. In fact, around-the-clock service is given on our base station equipment. The service stations perform maintenance under sub-contract from Motorola. The company has established these stations not only in Florida but throughout the United States.

Maule entered into a maintenance agreement with Motorola instead of setting up its own maintenance crew for several reasons. One is better service. Our radio system is quite extensive, covering a multitude of Florida cities. We have 60 watt base stations at 13 batching plants. All are remotely controlled at the dispatching points. The 13 dispatchers direct the activities of more than 200 radio-equipped mixer trucks. We also have two-way radios in 15 supervisors' cars and in 10 pickup trucks, used mostly for servicing mixers in distress.

Maule has base stations in Miami, North Miami, Mardock, Pompano Beach, Fort Pierce, Palm Beach, Fort Lauderdale, Ojus and Hypoluxo. In all, we have 230 mobile units operating from these cities. In order to maintain all of this equipment ourselves, it would be necessary to employ several good technicians. Hiring one would be unsatisfactory because there are occasions when two men are needed at the same time at two distant points of the system. It would be impossible for one man to handle both. We would lose the value of our radio system at the neglected point.

Five Service Stations

Through the maintenance agreement, however, we get service right away regardless of the location of the breakdown. This is because five stations maintain our equipment. There is always one station in immediate reach of trouble.

A brief study of a typical station gives evidence of its qualifications to service radio equipment. Caribbean Radio Communications in Miami is an ultramodern station with complete facilities for servicing both drive-in and drive-to customers. If one of our drivers is having trouble with his radio, we send him to the service station. The unit can be quickly repaired while the driver waits. Caribbean has extensive garage facilities for this type of service. In fact, large vehicles can be serviced simultaneously.

The station also utilizes stationwagons fully stocked with all the equipment needed for testing and repairing radios at Maule locations.

Advantages of Radio

We realize the value of our two-way radio system and would experience hardship without it. Therefore, quick service in the event of breakdowns is necessary. Two-way radio has proved advantageous to us in several ways: 1) it enables us to dispatch quickly a radio-equipped service truck in the event of mixer breakdowns; 2) it enables us to reroute mixer trucks when jobs are delayed; 3) it aids us in dispatching supervisors to jobs where they are most needed; 4) it gives greater control of our entire operations because we are always in immediate contact with all of our vehicles.

Another major advantage of our radio system is improved customer relationships. Requests from customers are handled quickly through radio.

The value of preventive maintenance is another reason for Maule's favoring a maintenance agreement with the manufacturers. All of our mobiles and base station equipment are regularly checked. Potential outages are caught

Continued on next page

HEAD CLEARANCE PROBLEMS ?

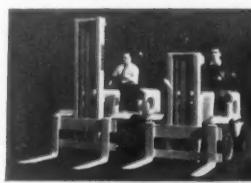


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For 144" lift; conventional mast (left) has down height of 92" vs. only 72" for Multi-Lift mast (right). For 120" lift, conventional mast has down height of 83" vs. 62" for Multi-Lift.

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Maule Radio

Continued from previous page

before they ever materialize. The result—our radio system continues in operation where it would otherwise become lost to us temporarily.

Economy is a factor in maintaining an elaborate radio system. To hire a radio maintenance staff would be expensive. Good radio technicians are hard to find, so they don't come cheaply. In addition, we would have to equip completely our technicians. This would mean service vehicles and the necessary testing and repair equipment plus an inventory of tubes and parts that could represent a substantial outlay of cash. If we hired one man, our gasoline costs would be extremely high because he would be forced to cover much ground to handle emergency maintenance alone, not to mention the periodic checks.

If we hired two or three men, our salary and equipping costs would be doubled or tripled. And, there would be many occasions when it would be impossible to utilize three, two or even one man on a full time basis. Radio maintenance activities are sporadic; too much to do for awhile, then nothing to do. While doing nothing, however, these men would still get paid.

We have been utilizing two-way radio advantageously for three and one-half years now. Our maintenance agreement has been in effect the same length of time. For Maule Industries, they go hand-in-hand.

Motel Uses Decorative Concrete Grids



Grid system reinforced concrete construction was used in the modern, functional styling of the Colony resort motel, in Swampscott, Mass. All of the room units of the Colony used the units, which require no acoustical treatment or other finishing, except for one coat of acoustical paint.

Originator of the Grid system is Grid Flat Slab Corp., Boston.

TESTED and PROVEN



Photo courtesy of Aggregate Plant Products Co., San Antonio, Texas.

Cardinal

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Many leading concrete batching plants are now using Cardinal Dial and Beam Scales. Cardinal scales are extremely flexible and can easily be integrated into any special equipment. Manual, semi-automatic or fully automatic operation. Specify Cardinal. Capacities from 500 lbs. to 100,000 lbs.

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PAYMENT MUST ACCOMPANY ALL ORDERS

PCA Engineers Named in New Jersey, Seattle

PCA has announced changes in field personnel in the New Jersey and Seattle districts, effective June 1.

Robert H. Lochow has been named to succeed Albert L. Blackwell as New Jersey district engineer, with headquarters at Trenton. Charles H. Knight, Jr., succeeds Lochow as district engineer for the states of Washington, Oregon and northern Idaho, with offices in Seattle.

PCA Wis. Engineer

PCA has announced the appointment of George K. McCord as Wisconsin district engineer with headquarters in Milwaukee. He succeeds W. D. Kimmel, whose retirement on the first of June followed one of the longest periods of service of any PCA district engineer.

Kimmel first joined PCA in 1923 and during his more than 25 years with the association became a recognized authority in the Midwest on field engineering problems.

Construction Outlook

Continued from page 19

estimated for 1959, the figure should have been 1,494,500. Besides this we now have an estimate of 22,000 new farm dwelling units, which previously had not been actually counted, but for which an estimate was included in calculating the dollar volume of farm construction.

The task of estimating the difference in value of construction put in place that this total of 151,700 additional nonfarm starts will produce is still before the Census. My very rough guess pending the official revision of the figures is that, for 1959, the additional amount will come to around \$2 billion. If this is anywhere nearly correct, then last year's expenditures for new private nonfarm dwellings were around \$19.1 billion instead of the \$17.1 billion previously estimated and total private construction expenditures in the neighborhood of \$40.3 billion instead of \$38.3 billion. Adding the 1959 estimate for government outlays, we get a revised year's total of \$56.3 billion.

In attempting an estimate of the 1960 outcome, we may start with the figure of \$15.4 billion of government construction, which I have already suggested. To this we may add a figure of around \$23 billion for private work of every kind except new dwellings, which is roughly the total I calculated last December and which as yet I see no reason for changing materially. This gives us a partial total of \$38.4 billion, leaving us still to ponder over the crucial area of nonfarm private dwelling unit construction.

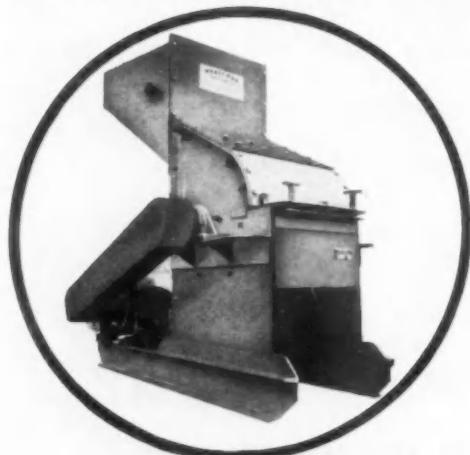
Again we face the statistical upset caused by the new housing estimates. The number of new private starts, both farm and nonfarm, through April of this year is now estimated to have been 376,800. Compared with the same months of last year on the new basis, we have a drop of 21 per cent. For private nonfarm houses alone, the drop was from 468,700 to 368,900 or also 21 per cent. This is sharper than we had assumed from the old figures, which for the same periods, showed a differential of 18.5 per cent. The average seasonally adjusted annual rate for private nonfarm dwelling starts for this period is estimated to be 1,229,000 on the new basis. So far as I can judge from the developing trends indicated by building permits, contract awards, and mortgage commitments, we should see a rather steady improvement in this rate. It is reasonable to assume that the total number of nonfarm houses started this year will be close to 1.3 million, which I believe to be comparable to the 1.2 million units, standard forecast on the old basis.

Not all these units will be completed during the year. Instead, because of the expected gradual build-up of activity in the second part of the year, there is likely to be an unusually large amount of work in progress to be carried over into 1961. Correspondingly, there were some—although I suspect fewer—incomplete units carried over from last year into the early months of 1960. With these necessary adjustments in mind, it is probable that an equivalent number of completed private nonfarm houses this year will be about 5 per cent under the number of units started, or somewhere in the neighborhood of 1,235,000.

Taking an estimate of \$13,445

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cost per unit for the nonfarm dwellings (which is the same figure as the 1959 average), we get a rough estimate of around \$16.6 billion for the year's outlay for total new dwelling construction.

On this basis, which will certainly have to be modified as we learn more about the characteristics of the additional houses now being counted, we shall have a total volume of all new construction during the year of around \$55 billion, compared with the revised estimate of \$56.3 billion for 1959, or 2 per cent less than the volume of a year ago. With a further adjustment for price changes, the drop in physical volume would be about 3 per cent to 4 per cent.

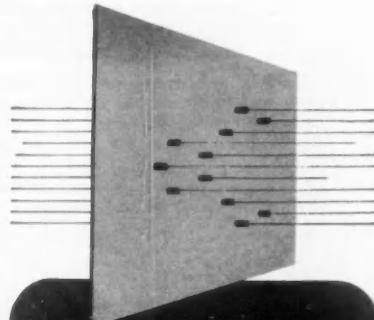
For the first time, therefore, since the end of World War II, we may expect to have a dollar volume of construction that is less than that of the preceding year, although we do have one other year, 1956, in which the estimated physical volume was lower than that of the preceding year.

I am confident that, if this is to be the outcome, it is a transitory phenomenon and that the uptrend will be resumed in 1961. The reasons for this go back to the unusual conditions prevailing at the opening of the present year. On the government construction side, we had the effects of the readjustments made in the interstate highway program during 1959, the lag in school construction apparently arising mainly from the desegregation problem. On the private side, we had a severe credit shortage which continued practically throughout the first quarter of the year and which had a particularly deterrent effect on private residential building at that critical period.

An improvement in the availability of mortgage funds is now under way. Asset growth among the types of institutions on which the mortgage market principally depends is encouraging, and the trustees of pension funds (probably our now most rapidly growing pool of savings) are for the first time showing significant interest in mortgage investment. Advance commitments of life insurance companies are reported to be at a higher level than they were in the corresponding periods of the past two years. Interest rates on conventional mortgages and discounts on insured and guaranteed mortgages have passed their peaks. The results are now becoming evident, as I have previously noted, in an increasing number of housing starts.

I can see nothing in the general financial picture that would prevent these new trends from continuing for some time or which suggest anything but relatively favorable mortgage conditions extending into 1961.

In short, the construction industry in 1960 will have a good year, although not, as we have become accustomed to, a better one than the year preceding, nor one that on the whole will make construction a contributor to the increased rate of growth of the economy. The weaknesses, however, are concentrated in a few areas, namely private residential building, highways, and public education building. Activity in other areas will be at very high levels, exceeding those of all other years. Moreover, in the weak sectors activity will be expanding as the year progresses, rather than declining and thus, to some measure, should counteract the effect of an over-all lesser volume for the year.



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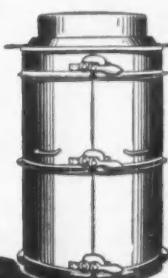


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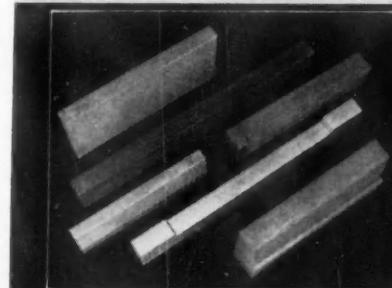
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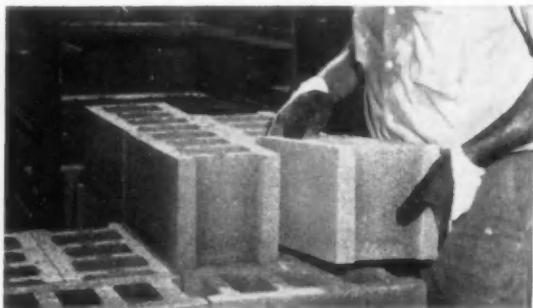
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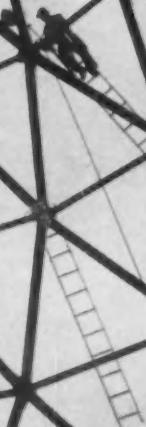
ADVERTISER'S INDEX

U1	Alpha Portland Cement Company	10
U2	Automatic Spring Coiling Company	22
U3	Besser Company	4
U4	Besser Company	Back Cover
U5	Butler Bin Company	9
U6	Cardinal Scale Manufacturing Company	26
U7	Cole-Sewell Engineering Company	32
U8	Columbia Machine, Inc.	2
U9	Concrete Equipment Company, Inc.	31
U10	Conwell & Company, E. L.	30
U11	Edick Laboratories, Inc.	23
U12	Edmont, Inc.	32
U13	Fraser Pallet Cleaning	31
U14	Gerson Company	30
U15	Kent Machine Company	24
U16	Landers-Segal Color Company	30
U17	Lithibar Company	1
U18	Lobstein Pallet Cleaning	30
U19	Manufacturers Equipment Company	12
U20	Master Builders Company, The	Inside Front Cover
U21	Penn-Dixie Cement Corporation	Inside Back Cover
U22	Praschak Machine Company	28
U23	Quinn Wire & Iron Works	29
U24	Southeastern Pallet Cleaning Service	30
U25	Spillman Company, R. L.	30
U26	Stearns Manufacturing Company	7
U27	Superior Concrete Machinery Company	31
U28	Supreme Products Corporation	29
U29	Syntron Company	21
U30	Tamms Industries Company	26
U31	Truck-Man Div., Knickerbocker Co., The	25
U32	Wal-Lok, Div. of Lenawee Peerless, Inc.	31

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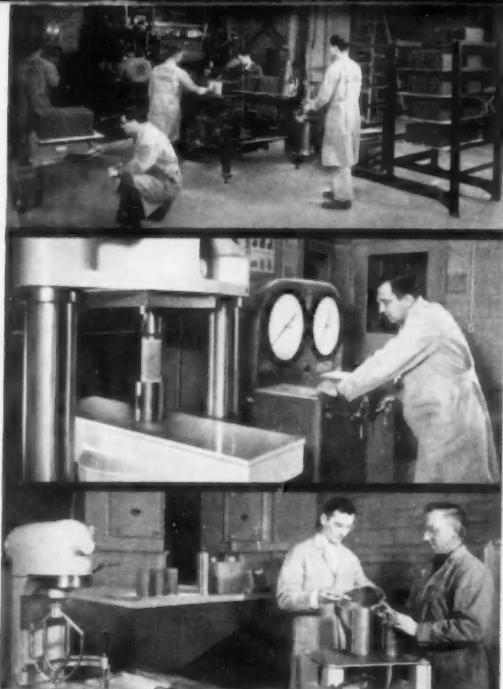
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